Digitized by the Internet Archive
in 2011 with funding from
University of Toronto

http://www.archive.org/details/dominiondentaljo32onta

DOMINION
DENTAL JOURNAL

(Official Organ of all Dental Associations in Canada)

EDITOR:
A. E. WEBSTER, M.D., D.D.S., L.D.S.
TORONTO, CANADA

ASSOCIATE EDITORS:

QUEBEC
EUDORE DUBEAU, L.D.S., D.D.S.
396 St. Denis Street, Montreal
STANLEY BURNS, D.D.S., L.D.S.
750 St. Catherine Street, Montreal
A. W. THORNTON, D.D.S., L.D.S.
McGill University, Montreal

ONTARIO
M. F. CROSS, L.D.S., D.D.S.
Ottawa
CARL E. KLOTZ, L.D.S.
St. Catharines

ALBERTA
H. F. WHITTAKER, D.D.S., L.D.S.
Edmonton

NEW BRUNSWICK
JAS. M. MAGEE, L.D.S., D.D.S.
St. John

NOVA SCOTIA
FRANK WOODBURY, L.D.S., D.D.S.
Halifax

SASKATCHEWAN
W. D. COWAN, L.D.S.
Regina

PRINCE EDWARD ISLAND
J. S. BAGNALL, D.D.S., L.D.S.
Charlottetown

MANITOBA
M. H. GARVIN, D.D.S., L.D.S.
Winnipeg

BRITISH COLUMBIA
H. T. MINOGUE, D.D.S., L.D.S.
Vancouver

VOLUME XXXII

DOMINION DENTAL JOURNAL
RICHMOND AND SHEPPARD STREETS, TORONTO
1920

LIST OF CONTRIBUTORS FOR VOL. XXXII

Page

ALVAREZ, WALTER C., San Francisco 9

AVERY, C. H., Toronto 209

BOX, HAROLD KEITH, Toronto 193

BOTHWELL, J. A., Stratford, Ont. 153

CHAMBERS, GRAHAM, Toronto, Ont. 80

COWAN, W. D., Regina, Sask... 322

CLAPP, GEORGE WOOD, New York, N. Y. 392

HEPBURN, H. H., Edinburgh, Scotland 204

HOVER, IVA MAE, Chicago, Ill. 305

NOLIN, JOSEPH, Montreal, Que. 84

JACK, A. C., Montreal, Que...... 119

KELLY, C. J., Markdale, Ont. .. 215

NEELANDS, J., Lindsay, Ont. .. 132

Page

NESS, H. B., Outlook, Sask. 132

MAGEE, J. M., St. John, N. B... 49

McKEE, GEORGE H. 161

McCALL, JOHN OPPIE, Buffalo, N. Y. 198

STILLMAN, PAUL R., New York City 156

ROACH, F. E., Chicago, Ill 1

SARRAZIN, JULES 168

STERRIDGE, J. H., London 273

SMITH, L. G., Toronto 230

THORNTON, A. W., Montreal 394, 423

TROTTER, W. C., Toronto, Ont.. 113

WEBSTER, A. E., Toronto, Ont. 115, 233, 345, 404

WOODBURY, FRANK, Halifax, N. S. 385

CONTENTS OF VOL. XXXII

Page

ORIGINAL CONTRIBUTIONS.

A Case of Hay Fever from Infection 320
Anaesthetics in the Dental Office 49
Attachments for Removable Appliances 1
A Tooth Root in the Lung 345
Business Problems of Dentists 392
Canadian Dental Association 385
Canadian Oral Prophylactic Association 113
Conservatism and Radicalism in Dental Treatment 39
Diagnosis before Treatment 75
Diagnosis and Etiology of Gingivitis 198
Dental Psychology 204
Early Clinical Manifestations of Traumatic Occulsion 156
Peridontal Disease and Treatment Disease 273
Efficiency for Dental Assistants 305
Fracture of the Lower Jaw 132
Management of Pulpless Teeth Not Paining 115
Notes on Making Metal Inlays 233
Ontario Dental Association 153
Pseudo Hemophilia 132
Prophylaxis Pathology Tongue Cleansing 168
Pathological Histology and Treatment of Gingivitis 193
Phosphine and Its Relation to Disease 80
Pulpless Teeth and General Health 215
Some Facts About White Bread 404
Stone Cutters and Cathedral Builders 84
The Question of Sufficient Remuneration for Dentists 119
Tooth Root Re-section 209
The Dominion Dental Council of Canada 322
The Relation of the General Practitioner to the Specialist in Dentistry 423
Who Is Educated? 127

SELECTIONS.

A Protest Against the Reckless Extraction of Teeth 9
Dentistry in Great Britain, as Found by a Committee of the House of Commons (continued from Vol. XXXI) 53, 86, 133
Diseases of the Teeth are Preventable 348
Efficiency in Dental Nursing 357
Manchester Conference on Diseases of the Teeth 244
Oral Syphilis 366, 409
Pyorrhea and Its Treatment 436
Suggestions as to Cure or Discussion of "What is the Matter with Dentistry" 14
Treating Putrescent Teeth 278
To Prevent the Decay of Children's Teeth by Attention to Diet 278
"Your Teeth" 378

DENTAL SOCIETIES.

Alumni Association, University of Buffalo Dental Department 65
Banquet to the C.A.D.C., M.D., No. 2 64
Canadian Dental Association 183
Canadian Dental Research Foundation 261
Canadian Oral Prophylactic Association Financial Report 60
Dental Examination Results at Royal College of Dental Surgeons 253
Dentists in Attendance at the Canadian Dental Association Convention 416
Detroit Dental Clinic Club 105
Dominion Dental Council of Canada—Professional Examination 279
Dominion Dental Council Examinations 286
Extension Courses and Lectures for Graduates in Medicine 62
Fifty-third Ontario Dental Convention 157
Graduates in Dentistry 185
Kentucky State Dental Association Meeting 27
Manitoba Dental Association 150
Many Canadians Registered by the General Medical Council of Great Britain 19
Minutes of the Ontario Dental Society 28
McGill Dentistry Results Issued 181
Northern Ontario Dental Association 454
Officers of the New Brunswick Dental Society 331
Ontario Dental Society Meeting 24

Page
Outline of Clinics Given at Ontario Meeting, 1919 25
Ontario Dental Society 103
Ontario Dental Society Convention. 104
Ontario Dental Society 146
Ontario Dental Society 221
Ontario Dental Association 177
Officers of Saskatchewan Dental Society 264
Report of Research Committee of the University of Toronto 179
Report of Executive Committee of Canadian Dental Association re 2 per cent tax 451
Second Year Results in Dentistry at McGill 263
Summary of Minutes of Meeting of Dominion Dental Council 325
Standing Committees of Canadian Dental Association 332
Saskatchewan Dental Association... 292
The American Academy of Periodontology 264
The Itinerant Dental Instructor.... 31
The Alberta Dental Association..... 290
Toronto Dental Society ..... 294.
Vancouver Dental Society 30
Western Manitoba Dental Society.. 454
Yale-Cariboo Dental Society 461

EDITORIALS.

Women's Auxiliary a Great Success 67
Dissections and Dental Students.... 69
Sir William Osler on Oral Hygiene 69
A Sane Root Canal Treatment 299
A Public Dental Service 266
Attempt to Violate New Brunswick Dental Act 187
British Columbia News 460
By Their Fruits Ye Shall Know Them 229
Canadian Dental Association 267
Canadian Dentistry at the Front... 34
Changes in the By-law 299
Dr. Frank Woodbury 33
Department of Soldiers' Civil Re-establishment 337

Page
Death Under Ether Administration. 458
Dentists Wanted in Korea 35
Dentistry and the Army 340
Dental Advertising 109
Dentistry for Those of Little Means 420
Dental Treatment 110
Eighty Per Cent. of the People Deprived of a Necessity 148
Editorial Notes 35, 70, 110, 148, 188, 231, 268, 301, 342, 380, 421
Fixed Bridgework 300
Ideas Rule the World 230
Golf in Dentistry 335
Nationalism of a Great Profession.. 455
Ontario Dental Society Statement.. 192
Oral Hygiene Committee 147
Ontario Government Dispensaries... 270
Opening of the Royal College of Dental Surgeons 397
Registration at Ontario Dental Meeting 222
Special Bulletin to the Dentists of Ontario 227
The Canadian Army Dental Corps.. 297
The Canadian Meeting 295
The New Excise Tax 419
The National Dental Association... 333
Trained and Untrained Healers..... 265

CORRESPONDENCE.

Curing Pyorrhea by Electricity..... 421
Green Stain on Children's Teeth.... 73
Legislation in New Brunswick..... 271
Pain Due to Incompletely Calcified Molars 37
The Exchange Rate in Gold 272

BOOK REVIEWS.

Child Welfare 37
Fractures and Dislocations of the Jaws 74
General and Dental Pathology 383
Early Diagnosis of Peridontal by Tonic Medication 382
Text Book on Pathogenic Bacteria and Protozaea 382

Dominion Dental Journal

Vol. XXXII. TORONTO, JANUARY 15, 1920. No. 1.

Original Communications

ATTACHMENTS FOR REMOVABLE APPLIANCES

Dr. F. Ewing Roach, Chicago.

Reported by Ernest A. Grant, D.D.S., Toronto.

At a time when there is such a keen interest in better partial denture construction through the development of the cast clasp and other special forms of attachment, the Toronto Dental Society was fortunate in securing Dr. F. Ewing Roach for their December meeting, especially following so soon after Dr. Nesbitt as each is the exponent of a different technique in the casting of clasps. Dr. Roach gave a talk in the afternoon on "Cast Saddles," and in the evening his paper on "Attachments for Removable Appliances."

In opening his paper, Dr. Roach said he felt it to be an honor, a privilege and also a responsibility to appear a second time before the Society especially as Toronto was the home of the master builder of partial dentures, Major W. E. Cummer, a tribute which pleased everybody except our popular but too modest Major. While we all know and esteem his great ability, it is indeed gratifying to hear it from the lips of eminent men from across the line. Dr. Roach also made passing reference to the large number of Canadians who had made the United States their home and achieved prominence in the dental profession, such as C. N. Johnson, Don M. Gallie and many others.

There never was a time, said the essayist, when there was a greater need for an honest conscientious endeavor to supply better partial dentures. The old pioneers of dentistry fifty years ago did better work along this line than was generally done to-day. He laid the blame for this on fixed bridgework, sloppy vulcanite work and dental laboratories and made a plea for all-gold construction in this work, using cast saddles which being stronger than swaged could be used as thin as

28 gauge. Then if long tube teeth were used, not much metal would be required. The cost would be less than that of fixed bridgework and not very much more than Vulcanite attachment which pulls away and is unsanitary.

The cast clasp is the one safe, sane, dependable means of anchoring partial dentures as its use provided for the conservation of the dental organ and the tooth pulp.

The following were fundamental principles:

1. The clasp should fit the tooth accurately, be rigid and strong.

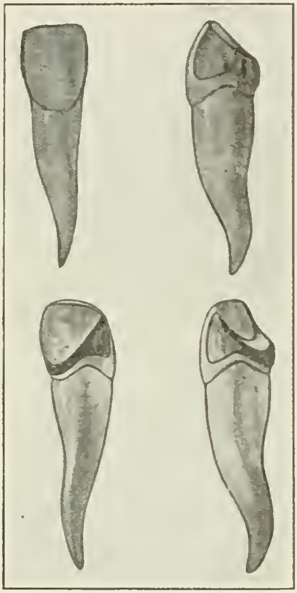


Fig. 1

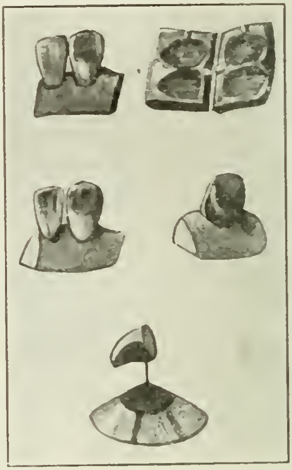


Fig. 2

Fig. 1—Mesio-distal grip clasp, showing two forms; a and b show labial and lingual view of clasp as made when occlusion will permit; c and d show modified forms for close bite.

Fig. 2—a. Model of cuspid and lateral in normal contact; b shows contact removed and prepared for mesio-distal grip clasp; c, sectional modeling compound impression; d, tooth waxed up; e, excess of model cut away and pattern mounted ready for investing.

2. Should be definitely retained in that position by an occlusal rest.

3. Must be designed to rest on enamel—never on cementum or exposed dentine. The larger the area covered, without impinging on the gingival margin, the better.

4. Must have a smooth surface. All castings have a fine silicate coating which is an abradant and must be removed either chemically or mechanically and all surfaces polished.

5. Must have a reciprocal bearing, that is, the tooth should

be grasped within the clasp, with the opposing forces balanced.

6. Should be so accurately assembled with the saddle that there is co-ordination between them. As the clasp bears on the hard immovable structure of the tooth and the saddle rests on the soft movable mucosa, it is necessary for assembling them to take an impression with both in position and the saddle under sufficient compression to give the proper co-ordination.

7. Danger of torsion must be guarded against.

8. Must be constructed so that it can be kept clean and the patient instructed how to keep it clean, otherwise rampant decay would result. If there were a marked susceptibility to caries, the partial denture should be left out at night.

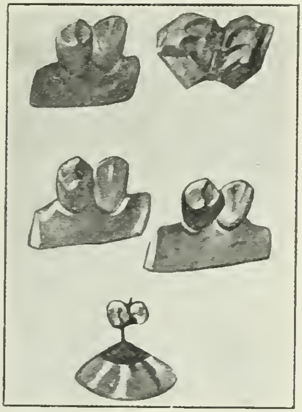


Fig. 3

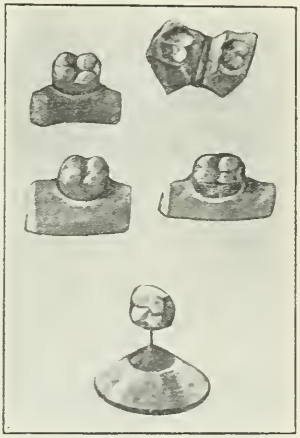


Fig. 4

Fig. 3—Embrasure grip clasp, a, original; b, complaster impression, using open end split tray; c, model; d, wax pattern; e, mounted ready for investing.

Fig. 4—Bucco-lingual contour grip clasp. a, original; b, complaster impression, using c closed end split tray; c, model; d, waxed up; e, mounted.

Dr. Roach said that he used three types of clasps:

1. The mesio-distal grip for anterior teeth.

2. The embrasure grip for bicuspids, which consisted of a cast portion and a wire arm passing over occlusal to buccal embrasure. The wire makes the clasp more flexible and avoids grinding.

3. The bucco-lingual contour grip clasp for molars.

The mesio-distal grip clasp was a new application of clasp construction for anterior teeth which takes a definite positive frictional grip of a surface remote from the gingival margin gripping the tooth on mesiol and distal surfaces and passing over the lingual surfaces. It had given him splendid results and the greatest pleasure in its use. In fact he could give personal testimony as he had one in his own mouth. If the proof of the pudding were in the eating—well he had eaten with it for two years and left it in at night also—in other words, he was "trying it on the dog." After a little persuasion, Dr. Roach was induced to pass the piece around for inspection and it was a convincing demonstration.

Construction.—Trim proximal surfaces of tooth with a Joe Dandy disk making a straight cut through and removing the contact point which is restored by the clasp. This can be done without cutting through the enamel. Then slightly round the squared angles so that the clasp may have even thickness. A sectional impression is taken with modelling compound. Take a piece of compound size of first joint of finger, pyramidal in form, heat over the flame, softening the point and leaving the base cold and press to place on the lingual surface. Chill and cut away excess of material which is forced through the teeth on to labial surfaces so that it can be withdrawn lingually. The slightest overlap would cause it to break. Then re-insert it, dry and examine to see if it is in correct apposition with squared edges. Then take labial half. If this labial half shows rounded or feather edges, it is an indication of an imperfect impression.

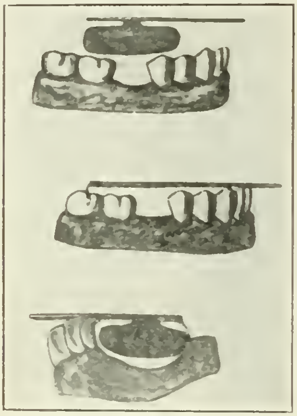


Fig. 5

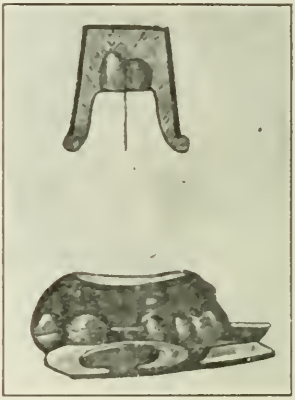
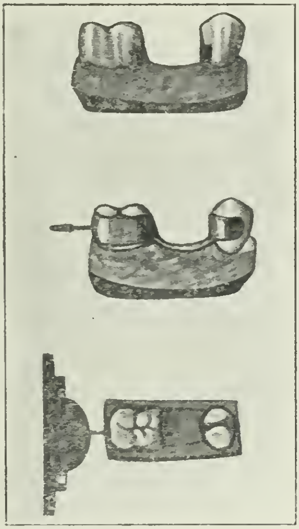


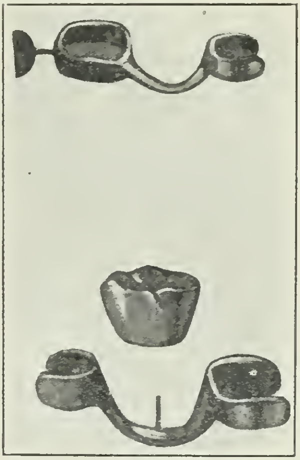
Fig. 6

Impressions for posterior teeth were comparatively simple. Complaster was used in a split hinged tray.

In casting clasps and saddles, Dr. Roach said he preferred the direct method, that is, casting direct on the model. It is more accurate, definite and simple. For this purpose the model was made of a special investment compound which he had suggested, or the ordinary investment compounds could be used by adding 50 per cent. snow white plaster. The wax pattern of clasp is then made on the model, sprue attached, excess model cut away and wax pattern invested on the model.

Dr. Roach then outlined his technique for those cases where one tooth is missing. The difficulty of getting an accurate impression was surmounted by taking a sectional impression. The old method of splitting the impression resulted in too much loss of detail. The space was first examined with a parallelometer and any excessive contours on the proximal surfaces of both teeth next to the space, reduced by grinding, buccal or lingual surfaces, however, should not be touched.





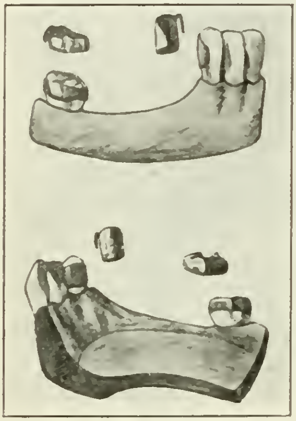
To take the impression a special half-tray of his own design was used by which the line of fracture could be definitely predetermined.

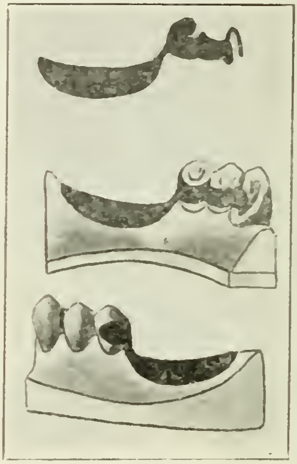
The first impression reproduced occlusal and lingual surfaces, trimming excess away from buccal surfaces and two-thirds of proximal, so that impression can be removed occlusolingually. The edges are then squared, coated with a separating medium and the half impression replaced in the mouth and while definitely seated and maintained in position, soft plaster is added in a thick mass to give impression of buccal and proximal surfaces.

When the model is obtained, all the other teeth except those to be clasped are cut away. The space is then examined for undercuts and, if any are present, these may be filled in from beneath the contact point to the gingival—by digging a small hole in the model at this point and filling in the undercut with inlay investment material.

For these cases, Dr. Roach favored casting the saddle and two clasps all in one piece on the model—with the sprue placed at one end. To accomplish this the molar clasp is waxed right around the tooth ring fashion. The distal part of ring being afterwards cut out with a saw. For larger pieces separate castings would be better.

The next type to be discussed was what Dr. Roach called the Unilateral, applicable to those cases where all the teeth posterior to the first bicuspid are missing on one side. In many cases it was entirely feasible to construct a piece retained by clasp on one side without carrying a bar across or around the mouth to the other side.





Favorable requirements were:

1. Good, firm, well defined, fully absorbed alveolar ridge.
2. At least two strong healthy teeth for clasping.
3. Short bite better than long bite.
4. Artificial denture in opposing jaw is favorable.

Saddle and clasp should be cast separately and assembled as separate units in the mouth. They should be placed in position in the mouth and an impression taken using a special tray which has a bar or flange passing down to the saddle. This is held in position by the operator, the top of the tray resting on the teeth and the flange compressing the saddle sufficiently to give the correct co-ordination between it and the clasp. Plaster is then carried in from the buccal side by the assistant and the pressure maintained until set.

Dr. Roach made a few remarks about casting. He preferred the centrifugal to any other method for making all kinds of castings for the following reasons:

1. Gold is melted remote from the flask and consequently investment material is not overheated. He pointed out that the investment should never be heated more than 500 degrees or 600 degrees, and for melting the gold a flame of city gas and compressed air was the most satisfactory. Nitrous oxide blowpipe might be used but there was a danger of overheating the metal. The acetylene gas flame should never be used with platinum and palladium alloys owing to the strong affinity of these metals for the carbon in the acetylene gas.

2. A large sprue and gateway can be used.

3. With large castings an air vent may be used.

4. The gold is refined each time a casting is made and the flux remains in the crucible.

There are two types of centrifugal machine, the vertical throw and the horizontal. The vertical in his opinion is the better as with it the molten metal travels by gravity and centrifugal force in a straight line to the sprue hole. In a horizontal throw machine the metal zigzags from side to side several times before hitting the sprue hole. Dr. Roach showed a new vertical throw centrifugal machine which he has lately designed. It was very simple in design, having no springs or gears, simply a double arm on an upright. On one side was a locking device and a pulley on which a cord was wound —to furnish the motive power—giving a slow-starting, cumulative force gaining in momentum instead of the quick jerking force obtained by springs or gears. On the other side the cylinder and sprue revolve vertically balanced by an automatic counterpoise. The crucible and flask had several special features. The flask was quite large and rectangular with one side opening as a lid which allowed of double investment for large saddles, also providing for a vent. This lid when closed locked into place and flask and crucible also locked into the arm. The crucible was designed so that its floor was continuous with that of the sprue-former so that the molten metal had a smooth continuous surface to travel over in its path to the sprue hole.

DISCUSSION.

Dr. Ante in opening the discussion remarked that Dr. Roach was not only a dentist but a genius. He had given the

Society a great deal of information but had modestly shunned mention of his various appliances and he thought it only fair to the essayist to briefly discuss them. The No. I Roach attachment had done great service in the past and may still be used in many cases to great advantage. The improved No. 2 Roach attachment may be used in inlays and pin attachments. Now that we have reached a stage where no mutilation is desired, Dr. Roach again comes to our aid with a clasp which is effective and simple, without any fussy ideas and which anyone could make. Dr. Ante also drew attention to the very ingenious Roach separating trays for taking split impressions of any teeth it was desired to clasp. Dr. Ante suggested that in cases of conical second molars, retention for clasp might be secured by cutting grooves on buccal and lingual surfaces. Paralleling of the proximal surfaces was very clever and polishing of inner surface of clasps important. He wished to back up Dr. Roach in his advocacy of the direct method of casting.

Dr. Clarke asked the composition of complaster. Dr. Roach stated that it was composed of potato flour and plaster of Paris, but he did not know the proportions. Someone volunteered the information that the proportions were four to six. On being asked if shrinkage affected the fit of bridges cast in one piece, Dr. Roach said that of course there was shrinkage but that this was so small that it hardly affected a bridge with one tooth, but that it might if there were two teeth. To another question Dr. Roach said he used a vent in all castings. He was then asked what the embrasure clasp was made of and replied that the cast portion was a platinum and palladium alloy and the wire of Ney's elastic wire, which is very tough and should be annealed before bending, and always bent over rounded surfaces. Ordinary clasp wire will melt when large bulk of metal is cast on it. In the case of a unilateral piece where the impression is taken with the saddle under compression, and inserted under compression, Dr. Roach was asked if this compression would in time cause absorption of the tissues under the saddle or cause the tooth to be lifted out of its socket. Dr. Roach explained that this compression was to obtain proper co-ordination between saddle and clasp so that each received its proper share of stress, and to prevent the clasped tooth being carried deeper into the bone.

Dr. Mason moved a hearty vote of thanks to the essayist and was seconded by Dr. Willard.

A PROTEST AGAINST THE RECKLESS EXTRACTION OF TEETH

Walter C. Alvarez, M.D., San Francisco.

* Read before a joint meeting of the San Francisco County Medical and Dental Societies, May 5, 1919.

Day after day I see people who have had half a dozen or more teeth extracted. Their former physicians had promised them great things; in some cases had even guaranteed a cure, but here they are still suffering and now greatly discouraged. Many have no chewing surface left, and the remaining teeth are often so distributed that the only thing to do is to remove them and put in plates. To my mind one of the saddest features is that, in many of these cases, an experienced physician might have foretold the unsatisfactory outcome and might have warned the orthopedist or the dentist to proceed cautiously and conservatively. The arthritis may plainly have been gouty or tuberculous, the headaches may have been due to nephritis or to advanced arteriosclerosis, and the pains in the shoulders may have been due to degenerative changes in the aortic arch. Sometimes I have secured the roentgenograms which were used in deciding which teeth were to come out and have been unable to find more than one or two roots which after years of experience I would call infected. In some, downward projections of the antrum had evidently been mistaken for abscesses. In others, it seemed to me that the physician, quite oblivious to any possible value of the teeth to their owner, must have ordered their extraction simply because he believed it a panacea for most diseases.

I believe we have lost our heads over this thing and that the time has come to call a halt. Men have obtained such beautiful results in some cases by extracting teeth that some of them are now trying to explain most diseases on the basis of these focal infections. In practice, they pull the teeth first, and if the patient returns unbenefited, they can then look to see what is the matter with him.

As the enthusiast often regards the conservative as a man who must be ignorant of the wonderful results which can be gained by using his methods, I wish to say that since 1911 it has been practically a routine procedure in my office to roentgenograph all suspicious teeth, and I have had hundreds extracted. I would emphasize the fact that I have seen my share of the miracles described by my radical friends—I, too, have seen inflamed joints go down over night; so-called tuberculous glands disappear as suddenly; headaches leave for good, and so on; but these things have not blinded me to the fact that for one miracle, I have seen many failures and disappointments. My radical friends who, from their writings, would seem never to have had any failures may perhaps ascribe my unfortunate results to conservatism and to the choice of poor dental surgeons. Although this argument may apply in regard to those cases in which I ordered the extractions, it can hardly apply to those people who were "cured" by these same radicals but who, after a period of relief, are again going the rounds of doctors' offices.

We must recognize these failures; we must face them squarely and study them with particular care. Many people are not benefited by the extraction of teeth no matter how thoroughly it is done, and no good can come from further refinements of that technic. In the middle ages if a man died it was because he had not been bled enough, or because it had not been done from the right vein. To-day we know that bleeding is useful in only a few conditions. Similarly, the day will come when focal infections will not be dragged in to explain all ills of the flesh. Seeing that there are these possibilities of failure, we must be more honest and conservative with those who put their lives in our hands. By all means let us continue to look for alveolar abscesses but, if we are to keep the respect and confidence of the public, if we are to avoid damage suits, we must be more careful what we promise some of our patients in return for a toothless mouth. Before deciding whether any or all of the suspicious teeth are to come out, the physician must look the patient over from head to foot. If he is young and sound, and if he has a dangerous arthritis, endocarditis or severe headache for which no other cause can be found, I believe we are justified in insisting on a thorough removal of the diseased tissues. When, however, the patient is old and failing; or when we find high blood pressure, arteriosclerosis and nephritis, let us be careful. Focal infections may perhaps contribute to the development of these chronic degenerative diseases, but I feel sure that they are not the only or even the principal cause. Certainly my experience has been that although the removal of the teeth will sometimes seem to give the patient a new lease of life, the arteries continue to harden, the pressure continues to rise, an dsooner or later the symptoms return. Hence it is that in these cases we should carefully consider all the factors involved. If the infected teeth are not serviceable, if they are loosened, perhaps hanging to wobbly bridges, or if their crowns are gone, there need be no question as to their removal. But if they are strong and serviceable, if the areas of rarefaction are small and questionable, and particularly if restoration by bridges will be impossible, let us be frank with the patient. Let us tell him that the proposed extraction is more or less of an experiment; that we will not promise him anything; but if his troubles are annoying him so much that he wants to leave no stone unturned in his treatment, he can try it.

It is one thing to order a dozen extractions when a man lies crippled with an acute or chronic arthritis, and another to order them because he feels nervous, has no energy, has indigestion, or has pimples on his chin. In the first place the patient is desperate, he is willing to take any chance to get well and will more readily forgive mistakes that arise through overzealous efforts than mistakes arising through lack of interest and neglect. In the second case, he is in no mood for big sacrifices; the treatment, even if successful, may cause more annoyance than the disease, and the physician may come in for a great deal of blame.

We must be careful, also, what we promise to those who, in addition to their root abscesses, have other sources of infection which cannot be so easily removed. I refer particularly to chronic bronchitis, sinusitis, prostatitis and urinary infections, all of which may persist in spite of expert treatment. We may perhaps have trouble, too, on account of pelvic inflammation and gall-bladder disease.

The radical group of dentists tell us that most of our failures to cure are due to the fact that we have not removed all of the diseased tissue from the jaws. They would like to open up the jaw widely and dissect away the alveolar process until the tooth can almost drop out of itself. Naturally these men have a certain amount of right on their side. I, too, have seen a number of cases in which diseased bone or the abscess itself was left by the man who extracted the teeth. There are some people in whom the roentgen ray shows a widespread change in the bone around the diseased teeth, and in these cases I think it is probably advisable to remove enough of the inner or outer plate so that the operator can see what he is doing. I feel sure, however, that in the average case, a good extractor can remove the abscess, sometimes entire, hanging to the apex of the tooth.

Many of our patients will return still complaining of their old troubles even when the roentgen ray shows that the removal of diseased tissue has been complete. In some cases the bacteria which may originally have entered through the jaws seem to have obtained so firm a hold on the joints, the heart valves and other tissues, that they will not leave simply because their old port of entry has been closed. In other cases, irreparable damage has been done and the joints cannot return to normal even after the disappearance of the infection. We must remember, moreover, that focal infection is probably not the only cause of arthritis, and our clinical study of this condition will not always begin and end with the search for pus.

I believe the *main* reason for our disappointments is that in many cases the alveolar abscesses seem to exercise no demonstrable influence on the patient's health. Time and again I have seen powerful, and healthy looking men with large alveolar abscesses which they had carried probably for most of their lives. They maintained that they had never had a headache or a twinge of rheumatism, that, in fact, they had never needed a physician. When such a man remains disabled after an injury we often try to rehabilitate him by removing the abscesses. Naturally, we often fail, simply because we take away something which has never had anything to do with the case. It may be, sometimes, that these sacs are as much outside the body as is a calcified tuberculous gland in the lung. When further bacteriologic work has been done we may find that some of them are sterile, the bacteria having died out just as they do in pus-tubes. Particularly in the case of the smaller areas, the necrosis may never have been infectious in origin but may have been produced by the chemicals used during the preparation of the root canals.

Many of the dentists have become so frightened over the terrible results which they think must follow every root infection that they are refusing to fill any root canals at all. They feel that the risk to life and health is so great that a man should immediately sacrifice every dead tooth in his head. Certainly the thousands of people who for the last thirty or forty years have been chewing contentedly on dead teeth (without signs of root infection) should be grateful that these radical ideas did not prevail when they were young. The trouble with many of our dentists to-day is that they do not know enough about the wonderful defences of the body against bacteria. These defences are particularly efficient in the mouth, where, in spite of the rich flora and the continual trauma, wounds heal with surprising rapidity. Bacteria are constantly getting through the first line of defence only to be stopped at the second, and I see no reason why the body cannot in many cases protect itself perfectly from the activities of a few invaders which have reached the apex of a tooth.

CONCLUSION

In view of the fact that the most thorough removal of focal infections often fails to cure arthritis and other diseases, let us be more honest and conservative with our patients. Let us be careful what we promise them. Let us save serviceable teeth whenever possible. Above all, let us do unto our patients only what we would have done unto ourselves if their teeth were in our heads.

Further, in your treatment I advise you to be conservative. Don't be "blown about by every wind of doctrine"; don't take up every new thing which is brought forward in the way of treatment. Private practice is not the sphere in which to try experiments; new methods should be tried in hospital, where they can be tried under exact conditions. Do not conclude that the new thing is, necessarily, the right thing. As Clough said:

"'Old things need not be therefore true,
O brother men, nor yet the new,
Ah! Still awhile the old thought retain,
And yet consider it again!"

The old treatment has stood the test of time, and has, probably, in most cases, justified itself up to a point. Be sure, therefore, that the new is going to be better than the old before you adopt it. There are some men who are forever rushing after new gods, after every fresh synthetic remedy or after vaccines, for example, which they apply to their patients with only a partial understanding of their action.—Robert Hutchison, "Some General Principles of Therapeutics," in "The Practitioner," September, 1919, p. 164.

SUGGESTIONS AS TO CURE OR DISCUSSION OF "WHAT IS THE MATTER WITH DENTISTRY?"

Cecil Corwin, D. D. S., Hayward, California.

Two men of equal mental poise may have the same education, and pass the same number of years in a profession, and arrive at opposite opinions on some leading questions. Thus it seems to be in regard to "What is the matter with dentistry?" The more and varied the expressions from members of the profession the better. Let us hope that the discussion will continue until such time as we can say, "There is nothing the matter with dentistry."

I have a number of criticisms to offer. My first is that dentistry should never have become a separate profession, and in consequence of a bad start we are going to have a hard time to win our race for recognition.

With all honor to our alma mater, of whom Dr. Chapin A. Harris, stands pre-eminent, I am of the opinion that had these men been more patient with the medical profession, they could have avoided the establishment of separate schools for the teaching of dentistry and conferring of separate degrees.

The next mistake was when Harvard University created the degree of Doctor of Dental Medicine (D. M. D.). Dentistry should be made a part of the art of healing and, while confined to a special task, should receive the degree of the medical profession.

Let there be only one degree in the healing art, and every man so honor it and conduct himself, that there will be nothing "the matter with dentistry."

Another thing the matter with dentistry is, the diversity of dental laws. Any man who graduates from a dental, or medical college, should become eligible to practise anywhere in the U. S. A.

When a man receives a degree he should become automatically a member of the association in which district he practises, and the fee, which we now are assessed to prosecute violators of the dental law, should go toward dues in the association. As long as a man is in practice his annual fee for membership must be paid or his license forfeited, the same as is now the law in California in regard to his state license.

When a man is granted his degree and he becomes a member of the association he must agree to conform to its laws, etc., and a failure to do so forfeits his right to practise.

Here is the remedy for the trouble of having two classes of practitioners, viz., ethical and unethical.

Every graduate and every practitioner should have the benefit of association with their fellows, in order to keep abreast with the times and this would furnish the necessary machinery. If a man could not attend every meeting he should have the transactions of important meetings printed and mailed to him. This plan would prevent the older practitioner from becoming "rusty" or getting out of touch with his fellows.

A scientific research laboratory should be financed by the government for dental advancement. The public receives the benefit of dental service; they have made no protest against medical appropriations for their benefit, and would endorse a dental scientific department of medicine on a proper scale.

A word regarding advertising: So long as men are constituted, as at present, we will have the "road-hog," the "food profiteer," and the advertising professional man.

Any young man possesed of enough gray matter to successfully pass through a reputable dental college need not worry as to his finances, so long as he furnishes faithful service. I can readily understand that a recent graduate might be anxious as to his success, become panicky and start to advertise. I do not believe that there is any great cause for this feeling, and it comes mostly from the failure of older practitioners to realize the necessity for properly looking after these young men, by more than a fraternal handshake. We ought to see to it that they get employment at once and aid them in securing a proper location. If this is done, many a man can be saved from gravitating into the class known as "unethical."

As far as advertising is concerned, we all advertise in some manner. There is a way of advertising ethically that is legitimate and proper. A sign on the window of an office is an advertisement that the profession recognizes as legitimate.

A sign on a billboard remote from the office, even if it only states the name and address of the dentist is not considered ethical. The difference is that in the first case the sign is to guide those who need professional services. The billboard sign constitutes an invasion of another practitioner's sphere of service and, therefore, puts the latter to a disadvantage or compels him to advertise also on a billboard in self-defense. It leads to expense and is an economic waste.

To advertise special skill is only another way of depreciating the ability of others in the same calling, and is consequently unethical and unjust to one's confreres.

Extensive advertising of one's professional ability, or office equipment, is vastly different in principle from a merchant advertising his goods. This point has not been properly appreciated by contributors on this subject. The merchant advertises his goods. They exist and can be examined; the professional man sells his services, they do not exist and their value can not be pre-determined.

No professional man who is entrusted with the health and life of a patient should deviate from what he knows, or believes, to be a proper procedure. If a general anesthetic for a certain operation is indicated he should not be persuaded to employ something else by any preconceived ideas of the patient.

If a case can be best handled by the use of local anesthetic, the added risk of giving a general anesthetic should not be taken, just because the patient wants it. This is so obvious that it needs no argument, although this condition does obtain largely, and constitutes one of the things that is the "matter with dentistry."

Another trouble with dentistry is that too many dentists regard the public as "existing for them and not they for the public." To draw a line between both kinds one needs only to ask, "do you advertise or not?"

After thirty years in the profession, I have yet to know a single ethical man who did not make a good living and save money if he wanted to. I know of many who made more than was good for them, for they made poor use of it and ruined their lives.

The fact of the matter is, dentistry has been pretty well stocked with a class of men who have entered it solely because it offered large pay for easy work. This kind usually resort to advertising and thereby label themselves as they deserve.

Let me here add that it is my opinion that no man who enters dentistry as a life calling need advertise, if he has any ability above the average.

During the thirty years of my experience I can discern many changes for the better, showing that the public is growing more appreciative of the dental organs, as factors in their comfort, health and appearance.

The recent wave of excitement has proven both to the army officers and medical profession that the dentist is an essential and this is our time to "clean house" and become at some future date, I hope not far distant, a part of the medical fraternity and not a separate specialty without a secure foundation.

We should be medical specialists, not dentists.

As there are 44,000 dentists in the U. S. alone, and each one sees about ten patients daily (say one-half million) it would take only six months for the entire population to visit a dentist.

It seems to me that our daily duties are pretty extensive advertising, and only needs systemizing to reach the ones who fail to give their own bodies proper care.

By doing only proper work and charging proper fees (not profiteering on the ignorant laity), we will soon be increasing our percentage of work done, to work undone.

As long as we find empty and putrescent root canals, caries under fillings, abscessed roots bearing crowns, 14K bridgework, 36 gauge 14K gold crowns, unpolished amalgam fillings, uncontoured approximal fillings, uncleansed root canals, and pyorrhea untreated, we must expect the public to be a little shy of us. No amount of advertising will overcome this shyness so do not waste any energy there, but keep hammering away on the sore spots until they are eliminated.

I do not wish to be understood to mean that the only unethical man is he who advertises. There are unethical men who do not advertise, but treat their patients as legitimate prey.

It is not fair to a part of the dental profession (say the ethical part) to support the conventions and help in making progress, while the other part (the unethical) profits by the discoveries or research work, and endeavors to convey to the public the idea that they are the discoverers. There is no doubt in my mind that progress is retarded by the hostile attitude between these two classes.

There are many common practices among the ethical dentists that I would as heartily condemn as I would those committed by the advertising class. Such a case came to my attention not long ago. This patient sought treatment at the hands of a pyorrhea specialist. After consultation it was decided to have X-ray pictures taken, as he was not sure he could save certain teeth. Charge $15.00 for consultation and talk. Pictures showed teeth incurable, so advised patient to have exodontist remove three teeth, taking a gas, oxygen, an

esthesia. Pictures cost $10.00. Extractions cost $15.00, mak-
money he needs.
ing $40.00 besides $8.00 previously spent with same pyorrhea specialist in treatment on those same teeth. Total $48.00 to have three loose teeth extracted. Another case was that of a root amputation by a prominent dentist. Many weeks of after-treatment followed. At last the opening was allowed to close. Total cost to patient $78.00. After a year of tenderness the patient came under my care. On opening root canal and placing a dressing, the slumbering abscess took on activity and in two days opened over the apex and, to our mutual surprise, I removed the amputated piece of root. This happened about fourteen years ago and the tooth is still giving perfect service.

While I do not like to condemn the acceptance, or rather the charging, of big fees, I do say that when one does accept a large fee he should *deliver the goods.*

These and similar practices are driving a large part of our patients to offices where work is "guaranteed" at a price fixed in advance, and is one of the things that is the "matter with dentistry."

I can not too strongly urge upon the dental profession to abandon the idea or practice of a fixed hourly scale of fee. The only thing capable of turning out a given product in a given time is a machine. Few machines are so perfect that their product is a fixed quantity and quality.

The average dentist is the direct antithesis of such an ideal machine and any one of common knowledge will see that his product can not nor should not be of equal value.

I am a firm believer in the fee system. A fee is not payment of a bill but is a gift from a patient or client to a professional man for services rendered. This idea of so much for an amalgam filling, and so much for a gold filling is strictly unprofessional.

All this talk about the business side of dentistry, systems of accounts, collections of bad bills and regulation of charges, is never going to get us anywhere.

All I say is; *Forget it!* Get the one big uplift idea fixed now; that if a man is a true professional man, possessing the highest possible ability he is capable of, and who is ready to serve his community with all his energy, he will not only be well paid by his appreciative clientele, but he will have all the money he needs.—*Oral Hygiene.*

Dental Societies

MANY CANADIANS REGISTERED BY THE GENERAL MEDICAL COUNCIL OF GREAT BRITAIN

APPLICATIONS FOR EXCEPTIONAL REGISTRATION.

At the meeting of the General Medical Council on November 27, the following Report by the Dental Education and Examination Committee on "Various Applications for Exceptional Registration" was submitted:—

The members of the Committee present were: Sir Charles Tomes, Chairman, the President, Mr. Hodsdon, Sir Arthur Chance, and Dr. Coey Bigger.

In view of the number of applications for registration on the Colonial or the Foreign lists which came in after the war, the opinion of the legal advisers upon the interpretation to be placed upon certain provisions of the Dentists Act was sought, and the substance of their opinion was embodied in the Report of your Committee presented during the May session, 1919 (see Minutes, Appendix xi, p. 3).

The action of your Committee in dealing with these applications must be governed by the letter of the Act, and not by its presumed intentions. But it may be remarked that its provisions were apparently meant to secure that persons intending to practise in the United Kingdom should obtain British qualifications, the only exceptions being in favor of those who would naturally have sought Colonial or Foreign qualifications. Such would seem to be the meaning of the limiting provision "not domiciled in the United Kingdom" or "has practised for more than ten years elsewhere than in the United Kingdom" (Colonial list); and "not a British subject" or "unless he has practised for more than ten years elsewhere than in the United Kingdom" (Foreign list).

The Committee has received the following applications for registration on the Colonial or Foreign lists:—

(a) Kazanjian, Varaztad Hovannes, D.M.D. Harvard, 1905.

He applied for registration last May, but the Committee had not before it sufficient evidence of his curriculum to come to a decision. It is abundantly established that he did good work during the war, having devoted himself to the treatment of face and jaw injuries exclusively. He has received the C.M.G., and now teaches military oral surgery at Harvard

Dental School. But, in the opinion of our legal advisers, your Committee is precluded by the terms of the Act from taking these matters into account, and must confine themselves to examining the nature of the diploma held.

The calendars of the Harvard school now sent show that the curriculum extended over three years only at the time when he qualified there, and the instruction in general medicine and surgery was less than is required of British students. With some regret the Committee finds itself debarred by the Act from recommending that this application be acceded to.

(b) McMeekin, Robert John, D.M.D. Harvard, 1896.

This gentleman is of British nationality; his application was also before the Committee in May, and was postponed for further evidence as to the curriculum. He passed the Board of Registration of Massachusetts in 1896, and was licensed in Nova Scotia without examination. Though he states that he studied for a fourth year, which was a repetition of the third, his diploma was obtained after three years, and the same remarks as to study of general medical subjects apply as in the last case, with which it corresponds as far as the diploma is concerned.

Hence your Committee is debarred from recommending that the application be acceded to.

(c) Osborne, Henry Turner, D.D.S.U. Mich., 1890.

Bennett, Mrs. E. Phillips, D.D.S.U. Mich., 1893.

This qualification was formerly registrable, but in 1893 a report on the American qualifications recognized up to that time was made to the Council, and the recognition ceased (Minutes, 1893, App. vii, p. 84).

It should, however, be pointed out that a D.M.D. Harvard, 1884, which diploma ceased to be recognized at the same time as the Michigan degree, was allowed to be registered at the May session, on the ground that there had been a considerable period during which registration could have been obtained if applied for. Further, a D.D.S.Michigan, 1894, was registered last year, on the ground that much of the curriculum had been taken out before recognition ceased; and at the time Mrs. Bennett obtained her diploma women could not get a British qualification.

The Committee recommends that these applications be acceded to, provided the applicants fulfil the other conditions prescribed in the Act.

(d) Shaw, Alexander Lester, Diplomate of Med. Coll., Bengal, 1904, M.C.P.S.S.Calcutta, 1907, D.D.S., N.W. Univ., Chicago, 1911.

The first two qualifications are not registrable medical qualifications, and are not evidence of dental training. As to the third, the Committee has nothing to show the course of study and examination, but Mr. Shaw states that in his day it only occupied three years. In any case he appears to be a British subject, and cannot have practised for ten years under his dental qualification out of the United Kingdom. Its consideration is therefore barred under Sec. 9 of the Dentists Act, 1878.

(e) Favez, Aloys, Diploma of Fribourg, 1910, D.D.S., Laval Univ., 1914.

This gentleman states that he studied at the Universities of Neuchatel and Fribourg, and that he had served two years' apprenticeship with a qualified dentist, and had spent two years in University studies by 1907. He is legally qualified to practise in Switzerland. He also says that after qualifying he entered the senior year of the Dental School of Laval University and graduated with honors, first in his class.

The normal curriculum of the Laval University extends over four years, but those presenting a foreign diploma are admitted as fourth-year students.

The Committee recommends that this application be acceded to, in virtue of the Laval qualification.

(f) Switzer, William George, L.D.S., R.C.D.S.Ont., 1896, D.D.S.U.Toronto, 1896.

Briggs, Frank C. H., L.D.S., R.C.D.S.Ont., 1900, D.D.S.U. Toronto, 1900.

Gilfillan, George Eliot, L.D.S., R.C.D.S.Ont., 1902, D.D.S.U. Toronto, 1902.

Kennedy, William, L.D.S., R.C.D.S.Ont., 1903, D.D.S.U. Toronto, 1903.

Hoskin, Hugh Alexander, L.D.S., R.C.D.S.Ont., 1904, D.D.S.U.Toronto, 1904.

McNally, Walter Hubert, L.D.S., R.C.D.S.Ont., 1904, D.D.S.U.Toronto, 1904.

Kelly, Ernest, L.D.S., R.C.D.S.Ont., 1906, D.D.S.U.Toronto, 1906.

Young, Eric Lyons, L.D.S., R.C.D.S.Ont., 1910, D.D.S.U. Toronto, 1910.

Adams, John Thomas, L.D.S., R.C.D.S.Ont. 1912, D.D.S.U. Toronto, 1912.

Schwalm, Harvey, Valency, L.D.S., R.C.D.S.Ont., 1914, L.D.S.Man., 1915, D.D.S.U.Toronto, 1917, Dominion Dent. Co. Cert. 1915.

Staples, Richard Charles Herman, L.D.S., R.C.D.S.Ont., 1915, D.D.S.U.Toronto, 1913.

Trelford, W. G., L.D.S., R.C.D.S.Toronto, 1913, D.D.S.U. Toronto, 1913.

Bailey, Norman Samuel, L.D.S., R.C.D.S.Ont., 1914, D.D.S.U.Toronto, 1914.

Hammell, Donald Henry, L.D.S., R.C.D.S.Ont., 1915, D.D.S.U.Toronto, 1915.

Wing, Ross Hamilton, L.D.S., R.C.D.S.Ont., 1916, D.D.S.U. Toronto, 1916.

Jamieson, Ernest Fletcher, L.D.S., R.C.D.S.Ont., 1916, D.D.S.U.Toronto, 1916.

Ingram, Thornton, L.D.S., R.C.D.S.Ont., 1917, D.D.S.U. Toronto, 1917.

Larmour, Robert Ross, L.D.S., R.C.D.S.Ont., 1917, D.D.S.U. Toronto, 1917.

At the last session the Council accepted for registration a practitioner with the above qualifications dated 1900 (Minutes, 1919, Appen. xi, p. 6).

The Committee recommend that these applications be acceded to.

(*g*) Peacock, R. M., L.D.S., R.C.D.S.Ont., 1899.

Jackson, Charles Joseph Frederick, L.D.S., R.C.D.S.Ont., 1905, Lic. Man. Dent. Bd., 1906.

Berry, Kenneth, L.D.S., R.C.D.S.Ont., 1917, Dominion Dent. Co. Cert., 1917.

Kennedy, Angus, Graduate of Dental Department of Detroit College of Medicine, Mich., L.D.S., R.C.D.S.Ont.

Morrison, John Francis, D.D.S., N.W., Univ., Chicago, 1905, L.D.S.Illinois, 1905, L.D.S., N.W. Territories, 1905, L.D.S.Man., 1906.

Cole, Lynn R., L.D.S.Man., 1910, D D.S.U.Penn., 1910.

Hodgson, Harold C., D.D.S.Baltimore, 1912, L.D.S.Man., 1915.

Garfat, A. A., L.D.S.Man., 1911, D.D.S.U.Penn., 1912.

These cases differ from those in the preceding paragraph in that the practitioners have not taken the degree of the University of Toronto, but rely on the Licence of the Royal College of Dental Surgeons of Toronto or the Licence of Manitoba which the Committee is at present not prepared to recommend for recognition.

(*h*) Harwood, Frank A. de Lothbiniere, L.D.S. Dental College of P.Q. (now School of Dental Surgery, Laval University), D.D.S.Univ.Penn., 1904.

Nolin-Trudeau, L., D.D.S.U. Bishop's Coll., Quebec, 1903.

These applicants have produced evidence that their curriculum for the L.D.S. extended over four years in the Province of Quebec, and that they carried on their studies in the Dental School and Hospital of Laval University. At the last session registration was granted to a practitioner with the D.D.S. of Bishop's College, Quebec, 1901, which is now associated with McGill University, and the L.D.S.P.Q., 1901.

The Committee recommends that these applications be acceded to in virtue of the Canadian qualifications.

(*i*) Arone, Isaac, Dental Degree of the Imperial University of St. Wladimir, Kieff, 1900.

The diploma is produced. There is no evidence as to curriculum, but the Secretary of the English Conjoint Board stated that such evidence as he had been able to obtain goes to show that the qualification is a good one, and that Russian Universities require a four-years' curriculum (see Kropman, *infra*).

(*j*) Kropman, Sholam Meerowitz, L.D.S.Eng., 1919, D.D.S. Yuryev (Dorpat, Russia).

This gentleman is already registered in virtue of his L.D.S., and now applies to be allowed to register his Russian qualification. When entering for the L.D.S. his curriculum was taken into account, and the Secretary of the Conjoint Board states: "The information I have collected from time to time has been that in Russia the course of study for the diploma to practice is always a four-years' course, and, whilst it differs in several respects from the course required in this country, it may fairly be said to cover the whole curriculum." Two qualifications from Kieff University were registered in 1917.

The Committee recommends that these two applications be acceded to.

Incomplete Applications.

Two applications were referred to the Chairman, in order that he might say if, in his opinion, they were likely to be acceded to. One applicant had a qualification from Washington University, and the other the D.D.S. of the Western Reserve University, Cleveland, Ohio, 1918. In both cases a curriculum of only three years was disclosed, and the applicants were informed that it was improbable that they would be registered.

CHARLES S. TOMES,
November 27, 1919. *Chairman.*

Sir Charles Tomes, in submitting the report, pointed out that the present conditions differed very much from those obtaining when the Dentists' Register was drawn up, as in the former time there were very few reputable dental qualifications: hence it was so drawn that recognition of qualifications other than of British subjects should be limited to those persons who naturally might be expected to take qualifications other than British. The object was to prevent persons going hither and thither seeking to obtain a cheap qualification. The present result was that the Council's hands were much tied in the recognition of foreign and Colonial qualifications. Sometimes a qualification could not be recognized purely on its merits; regard must be had as to whether the claiming person came under the provisions of the Act. A Colonial applicant must either not have been domiciled in the United Kingdom or must not have practiced for more than ten years within the United Kingdom, and, in order to get on the Colonial List, he must present a Colonial qualification. To get on the Foreign List he must either not be a British subject at all, or he must have practiced for more than ten years elsewhere than in the United Kingdom. The result was to rule out many qualifications which, on their merits, might commend themselves to the Committee. This was the idea which was at the root of the treatment of exceptional cases.

Sir John Moore pointed out that according to the Act (Section 7) application to the Registrar with payment of the fee was all that was required, and it was unfair to require Irish, Scotch and provincial men to communicate direct with London; many had come up personally to carry through their registration.

The matter was not pursued, and the report was duly received and adopted.

ONTARIO DENTAL SOCIETY MEETING

The Ontario Dental Society will hold its annual meeting in Toronto, May 3, 4, 5, 6, 1920.

OUTLINE OF CLINICS GIVEN AT ONTARIO MEETING 1919, DETROIT CLINIC CLUB

Prosthodontia Section.

1.—PRELIMINARY IMPRESSIONS AND THEIR SIGNIFICANCE.

Reason for making preliminary impressions—Value of having articulated models in explaining dentures to patient.

Making Preliminary Upper Impression—Examination of mouth—Selection of trays—Working properties of Compound—Insertion of tray into mouth—Muscular movements—Chilling the compound by means of sponges.

Making Preliminary Lower Impression—Examination of ridges—Selection of tray—Insertion of tray into mouth—Muscular movements—Chilling and removal from mouth.

Clinicians' Talk to Dentist—Opportunity to study idiosyncracies of patient—Reduction of spongy tissue or ridges—Can estimate difficulties to be overcome—Fee for this consultation service.

By Dr. Frank W. Holt, Detroit.

2.—PRELIMINARY OR STUDY MODELS AND THEIR INDIVIDUAL IMPRESSION TRAYS.

Value of—Use of Greene-Kerr Approximate Metal Models—Pouring impression—Insertion of metal model—Swaging trial baseplate and individual impression tray—Making compound impression tray or correctable impression.

By Dr. V. B. Rea, Detroit.

3.—TEST IMPRESSION OF THE UPPER ARCH.

Manipulation of compound—Securing equal pressure on hard and soft parts—Making the impression in steps—Seating the impression — Conforming impression to muscles and tissues on the right side—(in other words, muscle trimming)—Conforming to superior labial fraenum—Conforming to muscles and tissues on the left side—Determining length of expectant denture or "post-damming"—Conformation of compound to tuberosities—Conformation of compound to buccal and labial aspects of the ridge—Testing finished impression.

By Dr. T. Cannon, Detroit.

4.—TEST IMPRESSION OF THE LOWER ARCH.

Area of surface to be covered—Reasons for using "Correctable compound impression tray"—Seating impression

—Muscle trimming on right side—Muscle trimming of labial aspect—Muscle trimming on left side—Conformation or trimming of lingual aspect of ridge on right side—on left side—of lingual fraenum—Test for fit.

By Dr. William A. Matheson, Detroit.

5.—WORKING OR CORRECTABLE MODELS—TRY-IN PLATES AND BITE RIMS.

Pouring impressions using Greene-Kerr Approximate Metal Models—Swaging tin try-in plate on study model—Value of try-in plate—Reproduction of irregularities and rugae of the individual case—Selection of wax—Building bite-rims.

By Dr. Lloyd Rogers, Detroit.

6.—TAKING THE BITE—MOUNTING ON THE ARTICULATOR.

Marking Median line—high lip line—rest line—low lip line—Attaching bite stem to wax-bite rim—Adjusting face bow to patient's head—Attaching bite stem to face bow—Transferring face bow, bite stem and trial plates from patient to articulator—Selection of articulator—Attaching correctable models to the trial bite plates—Mounting on the articulator.

Dr. Chas. Lane, Detroit.

7.—SELECTION OF TEETH—TRUBYTE SYSTEM.

Synopsis of the entire system—Dr. J. L. William's discoveries—Fallacy of the temperamental theory—3 distinct types of faces—3 distinct types of teeth—Laws of harmony—Harmony between face form and tooth form—Finest harmony—Approximate harmony—Disharmony—Classification of tooth forms—Consideration of Class I—severe square type—Consideration of Class II—severe tapering type—Consideration of Class III—severe ovoid type—The 14 modifications—Selection of proper size tooth with reference to oral orifice—Manner of selecting molar and bicuspids—Form of line of occlusion in arrangement of teeth predetermined by shape of central incisor and shape of face—Shading of trubyte teeth harmonious with shading in natural sets.

By Dr. P. C. Lowery, Detroit.

8.—ARRANGEMENT OF TEETH TO PRODUCE NORMAL BALANCE BITE.

Arrangement of six anterior teeth to produce a characteristic expression to suit individual needs of the case—

Arranging the posterior teeth so that when—during the masticating function—the stress will be applied to the ridge in the proper direction—Arranging the lower teeth in occlusion with the upper—Testing the teeth for "working bite"—Testing for "Balancing bite"—Developing contour of buccal and labial flanges of the dentures in wax—Developing gum festoons—Development of rugae—Trial of dentures in the mouth—Making polishing plate for palatal portion—Making polishing plate for buccal and labial portions—Removal of casts from articulator.

By Dr. Elmer L. Whitman, Ann Arbor.

9.—FLASKING—PACKING—LINING—VULCANIZING—CARVING FOR ESTHETICS—FINISHING AND GRINDING-IN OF THE DENTURES.

Selection of flask—Method of flasking—Use of Greene-Kerr occlusal retainers—Selection of rubber—Heating rubber before introducing it into the matrix—Heating the matrix previous to packing the rubber—Method of packing—Method of hand-testing to determine amount of rubber in the matrix—Value of lining dentures with a metallic substance—Flask closing—(initial stage)—Selection of vulcanizer—Use of vulcanizer of this type—Advantages—Heating up the case—Closing flasks in the vulcanizer—Time for vulcanizing rubber—Tempering rubber—Finishing the denture—Carving for esthetics or burring—kind of burrs used—Trying dentures in the mouth—Grinding in of the dentures on the articulator—Final polish of the dentures.

By Dr. W. H. Waller, Detroit.

10.—MOTION PICTURE CLINIC ENTITLED—

"Technic for Making Impressions and Models for Artificial Dentures."

By Dr. W. A. Giffen.

KENTUCKY STATE DENTAL ASSOCIATION MEETING

The next annual meeting of the Kentucky State Dental Association will be held in Louisville, April 7, 8, 9, 1920.

A program of unusual interest has been planned. Address all correspondence to W. M. Randall, Secy., Louisville, Ky.

Yours fraternally,

W. M. RANDALL, Secretary.

MINUTES OF THE ONTARIO DENTAL SOCIETY

Y.M.C.A. Auditorium, College St.,
Toronto, Monday, April 28, 1919.

The 52nd meeting of the Ontario Dental Society met here at 2 p.m., with the President, Dr. J. E. Rhind, in the chair.

Moved by Drs. McKim and Smith that the minutes of the last meeting be taken as read.

The President made a few opening remarks of welcome, and asked Dr. Devitt to take the chair.

The President read his address. It was moved by Drs. Conboy and Webster that the President's address be received and then reported in the minutes at a later session of the Society. Carried.

The Secretary read the report of the Executive Committee as follows:

"Your Executive Committee desire to recommend—

"1. That the Society appoint a committee of five to incorporate itself.

"2. That the revision of the Constitution as submitted to your Executive be accepted after its reading before the O.D.S."

It was moved by Drs. Colon Smith and Webster that the recommendation of the Executive Committee be received. Carried.

The Secretary read a proposed copy of Incorporation, and Dr. Willmott presented the proposed change in the Constitution.

It was moved by Drs. Conboy and Allen that before Incorporation the consent of the Board of Governors be obtained, and that the Chair appoint five members. Carried.

It was moved by Drs. Willmott and Shantz that the Constitution as read be adopted. Carried.

Dr. Percy Howe, of Boston, Mass., read a very able paper on the "Howe Method of Silver Nitrate Root Canal Treatment," which was followed by a discussion.

The President named the following as a Nominating Committee: Dr. Kennedy, Toronto; Dr. Colon Smith, London; Dr. Bald, Sault Ste. Marie; Dr. Webster, Toronto; Dr. W. A. Armstrong, Ottawa.

It was moved by Drs. Bothwell and Willmott that the following be the Board of Governors: For one year—Drs. MacLachlin and Gausby. For two years—Drs. Brooks and McKim. For three years—Drs. Conboy and Plaxton. Carried.

It was moved by Drs. Willmott and Webster that the minutes of the previous Convention be taken as read. Carried.

Dr. Webster reported for the Nominating Committee as follows: Honorary President, Dr. J. E. Rhind, Toronto; President, Dr. J. A. Bothwell, Stratford; Vice-President, Dr. J. A. Fleming, Prescott; Secretary-Treasurer, Dr. John A. Bothwell, Toronto.

Advisory Committee:—Dr. R. G. McLaughlin, Dr. Wallace Seccombe, Dr. A. D. A. Mason, Dr. Harold Clark, Dr. T. H. Wylie.

Oral Hygiene Committee:—Dr. A. Ellis, Dr. F. C. Husband, Dr. F. J. Conboy, Dr. H. E. Eaton, Dr. J. P. MacLachlan.

The Archivist, Dr. Kennedy, is already in nomination, according to the new Constitution.

Moved Drs. Ellis and Conboy that the report be received and adopted. Carried.

It was moved by Drs. Conboy and Ellis that the Board of Governors be authorized to give a liberal grant to the Oral Hygiene Committee. Carried.

Dr. Rhind named the following as a Committee to secure the incorporation of the Society: The President, Dr. J. A. Bothwell; Dr. A. E. Webster; Dr. W. W. Willmott; Dr. C. A. Kennedy; Secretary-Treasurer, Dr. John A. Bothwell.

Dr. Conboy gave a short report of monies received for the Canadian Army Dental Corps.

Dr. Webster reported for the Advisory Committee.

Dr. Ellis reported for the Oral Hygiene Committee.

Moved by Drs. Willmott and Bothwell that the reports be received. Carried.

Moved by Drs. Willmott and Colon Smith that the next meeting be held in Toronto. Carried.

Moved by Drs. Willmott and the new President, Dr. J. A. Bothwell, that the Board of Governors be instructed to send a letter to the Y.M.C.A. expressing our appreciation of the services rendered during our Convention.

It was moved by Drs. Willmott and Webster that 1,200 copies of the new Constitution be printed and sent to each licentiate. Carried.

Wednesday afternoon, Dr. Hall of Chicago presented a paper on "The Hall Method of Prosthetic Dentistry."

Monday night, a film, "Fit to Fight," was shown at the Mining Building.

On Tuesday, Wednesday and Thursday, very interesting Progressive Clinics were shown by Drs. Webster—Ante—

The Hamilton Clinic Club, and the Detroit Clinic Club.

Two luncheons were held Tuesday and Wednesday, at which Rev. A. Logan Geggie and Sir John Willison spoke most entertainingly.

VANCOUVER DENTAL SOCIETY ENTERTAINS B. C. CANADIAN ARMY DENTAL CORPS OFFICER AND MEN

Music and mastication, as a healthful and pleasant mixture, were well tried out at a dinner given in the Blue Room of the Hotel Vancouver by the officers and members of the Vancouver Dental Society, to welcome home those members of the profession who had served in the Canadian Army Dental Corps during the war. In addition to roast turkey and other good cheer, the schedule provided for "toasts, jokes, stories, gas attacks, air raids, submarine exploits, bombs, general excitement, etc., etc., etc."; and the company, several score in number, hardly waited to get through with the "good eats" before starting in on the vocal exercises, with which they kept things lively for several hours.

Dr. W. J. Lea occupied the post of "Mess President," and proposed "The King." This was followed by the lusty singing of "O Canada" in general chorus. Then Dr. Geo. Telford gave an address of welcome to the returned men, and urged that every help should be given by their professional colleagues with a view to their re-establishment in civil life.

The roll call of the C.A.D.C. men (B. C. unit) next took place, the names totalling about 50. Approximately one-half of the men were present, and messages were read from those who were absent. This part of the proceedings was entrusted to Dr. J. E. Black, and was followed by a half-minute "silence" in honor of all dead heroes.

The hearty singing of "Keep the Home Fires Burning" was the next item sung in the past with heavy hearts, but now with joy and thanksgiving. There was also some enjoyable part singing by a quartette consisting of Drs. Peden, Hill, Oberg, and Moore, who enlivened the evening with such items as the "Alabama Lullaby," and "Till We Meet Again." Dr. F. G. J. Bezeau acted as pianist and "bandmaster." Another feature of the evening's entertainment was Dr. W. S. Watson's reading of "Jean De Prez."

In response to the address of welcome short speeches were made by Dr. A. E. Wark, president of the B. C. Army Dental

Club; Dr. H. A. Simmons, and Dr. R. Jamieson; and "Pack Up Your Troubles" followed another general chorus.

There were also talks on "Overseas Work," by Major O. N. Leslie and Dr. E. H. Crawford, who were the first two to go over, and on "Work at Home," by Major H. T. Minogue, who organized the Dental Corps here before going overseas.

The company dispersed shortly before midnight after concluding a rattling good time with "Auld Lang Syne."

ROLL-CALL OF C.A.D.C. MEN.

R. W. Alward, M. C. Bagnall, R. C. Bamford, F. G. J. Bezeau, A. H. L. Campbell, H. Clarke, W. B. Clayton, E. H. Crawford, R. L. Davison, C. S. Dent, L. Douglas, W. A. Fergie, H. B. Findley, J. E. Gee, W. B. Gordon, T. N. Guy, W. J. Hacking, J. Harper, H. J. Henderson, J. F. Hill, R. Jamieson, W. H. Keller, O. N. Leslie, T. H. Levey, S. Little, R. A. McAlister, A. McInnes, A. A. McRae, G. O. McRae, P. E. Margeson, S. P. H. Marlatt, W. Mason, H. T. Minogue, F. H. Moore, F. H. Quinn, S. Redpath, W. J. Ruthford, J. W. N. Shepherd, H. A. Simmons, W. C. Sprague, W. K. Sproule, E. S. Tait, A. J. Thomas, E. L. Thomson, R. F. Verrinder, A. E. Wark, G. C. Watson, V. D. Wescott, C. N. Westwood.

THE ITINERANT DENTAL INSTRUCTOR

The following editorial taken from the Pacific Dental Journal speaks for itself. Many dentists will say "Amen" to its sentiments:

"At a recent meeting of the Los Angeles County Dental Society a resolution was unanimously passed for the purpose of restraining, as far as it may be possible by such means, the ever-growing epidemic of itinerant dental instructors from which this and other communities have for years past been the uncomplaining victims. The society with a membership of around five hundred has gone on record as opposed to any form of graduate and post-graduate instruction which is not fostered by an educational institution, a dental society or a study club composed of members in good standing in their respective dental societies. The itinerant dispenser of so-called dental education is invited to remain as far away as possible from the sphere of influence of the Los Angeles County Dental Society.

"The resolution in question reflects the state of mind of those who in the past have been prevailed upon to become members of classes organized for the purpose of improving technical methods or to broaden scientific foundations. These courses with hardly any exception at all have been started primarily for the lust of money of their promoters or to further the sale of some dental product, an instance of the latter variety being still vivid in the minds of many dentists of this state. Under the guise of dental missionaries certain so-called instructors collected fees from dentists for educational services, when as a matter of fact the object of the expedition was to stimulate the sale of a certain apparatus, the distribution of which among dentists was not up to that time sufficiently satisfactory to the financial ambition of its manufacturer.

"An inquiry into the qualifications, pedagogic and professional, of these self-appointed post-graduate teachers, in most instances reveals nothing that by any stretch of the imagination could be construed in the light of a license to impart instruction to under-graduates, to say nothing of graduates of years of standing. Any one who is not versed in all the scientific principles which constitute the foundation of technical procedures that are to be taught at these pseudo-educational courses should be barred by moral or legal force from occupying a teacher's platform, and as most of these so-called instructors are bearers of the badge of partial and therefore dangerous culture, their elimination from the educational field will be warmly acclaimed wherever any by whomsoever dentistry is held on a plane of strict professionalism.

"A technical procedure, a surgical intervention, a new method of curing (?) pyorrhea, or what not—based upon the evidence of one man's word without other substantiating proofs, clinical, radiographic, bacteriologic, etc., and all of it the outcome of an intelligent analysis of the information available on the main and correlated subjects, can not be accepted in the light in which they are presented. The perpetrators of such teachings fulfill satisfactorily the requirements of professional piracy.

"Post-graduate instruction, when it emanates from men who because of their experience, knowledge and analytical trend of mind have rightfully gained the title of dental teachers, is of undoubted value and adds to the assets of dentistry. When given by those who find in the prospects of material gain the only pretext for pedagogic self-appointment and who are men of only mediocre cultural or scientific attainments it drains the resources of dentistry and sprinkles its escutcheon with one of the most pernicious brands of empiricism."

Editorial

EDITOR:
A. E. Webster, M.D., D.D.S., L.D.S., Toronto, Canada.
ASSOCIATE EDITORS:

Ontario—M. F. Cross, L.D.S., D.D.S., Ottawa. Carl E. Klotz, L.D.S., St. Catharines.
Quebec—Eudore Debeau, L.D.S., D.D.S., 396 St. Denis Street, Montreal; Stanley Burns, D.D.S., L.D.S., 750 St. Catherine Street, Montreal; A. W. Thornton, D.D.S., L.D.S., McGill University, Montreal.
Alberta—H. F. Whitaker, D.D.S., L.D.S., Edmonton.
New Brunswick—Jas. M. Magee, L.D.S., D.D.S., St. John.
Nova Scotia—Frank Woodbury, L.D.S., D.D.S., Halifax.
Saskatchewan—W. D. Cowan, L.D.S., Regina.
Prince Edward Island—J. S. Bagnall, D.D.S., L.D.S., Charlottetown.
Manitoba—M. H. Garvin, D.D.S., L.D.S., Winnipeg.
British Columbia—H. T. Minogue, D.D.S., L.D.S., Vancouver..

Vol. XXXII. TORONTO, JANUARY 15, 1920. No. 1.

DR. FRANK WOODBURY HONORED

The most outstanding figure in Canadian dentistry to-day is Dr. Frank Woodbury, Dean of the Dental Faculty of Dalhousie University and President of the Canadian Dental Association. It is fitting that a man who has done so much for his calling in his home country and abroad and who has been so truly a Canadian citizen in all that it means should at this time receive an honorary degree from his own University. Dr. Woodbury was among the first to advocate a national organization of the dental profession in Canada, and was one of its chief councillors at the memorable meeting in Montreal in 1904, when the foundations were laid for the Dominion Dental Council and the Canadian Dental Association. Dr. Woodbury is to the dental profession of Canada to-day what Dr. George W. Beers and Dr. J. B. Willmott were in their day. He is dean of the Canadian profession. We congratulate the University in having so worthy a recipient of its honors and Dr. Woodbury personally on having his merits recognized by such an honorable body. The dental profession graciously acknowledges such tributes to its leaders.

Below we print an abstract from the ceremony of conferring the honorary degree of LL.D. on Dr. Woodbury as published in the Dalhousie "Gazette":

In presenting Dr. Woodbury, Dr. Harris said:

"Mr. President,—The University has decided to request you to confer the degree of LL.D. on the chief representative of a Faculty closely allied to that of Medicine, I mean the Faculty of Dentistry.

"The University cannot forget the conspicuous services rendered to this our youngest Faculty by Dr. Frank Woodbury, the virtual founder of the School of Dentistry and one of its most devoted supporters.

"As Dean of his Faculty, it is one of the Doctor's duties to present members of it for degrees; but as in this case the recipient is the Dean himself, he would have to act in two capacities at once—a position which is remotely comparable with that of a celebrated character in a popular drama who, as executioner, has to decapitate himself as criminal.

"So outstanding have been Dr. Woodbury's services to the cause of the advancement of the Faculty of Dentistry that he has succeeded in raising it in the estimation of those best qualified to judge to a rank second to none in this wide Dominion. The Senate feels that the fact of his being one of themselves is no adequate reason for abstaining from recognizing the invaluable pioneer work in the academic interests of the profession of dentistry which he has for the last ten years carried on so energetically and so acceptably."

CANADIAN DENTISTRY AT THE FRONT IN FRANCE

General A. E. Ross, C.B., C.M.G., LL.D., in an address delivered before the Canadian Club, Kingston, Ontario, is reported to have spoken as follows concerning dentistry at the front:

"The dental work was a great feature of the medical corps, but it had been hampered owing to the fact that the laboratory was away down at Havre, and whenever a man needed laboratory work it was generally eight weeks before his work would be done. Gen. Ross was able, however, to buy a dental laboratory for the Canadian corps, and this was the only one on the entire front. The work here was done so thoroughly and quickly, that it became common even for soldiers to be sent from England to have dental work done."

General Ross's statement speaks well of the dental work but casts a reflection on the general headquarters that could not see that dentists were needed where the men were. His statement that only one dental laboratory existed nearer to the lines than that at Havre is astonishing.

DENTIST WANTED IN KOREA

Dr. O. R. Avison, President of Severance Union Medical College and Severance Hospital, Seoul, Korea, is calling for a dentist, and describes the need as follows:

"Would you kindly try to find for us a missionary dentist who has a general knowledge of dentistry and a special knowledge of mechanical dentistry, including porcelain work.

"The conditions of appointment would be those applicable to a missionary. The qualifications of such a man might be passed upon by one of the mission boards in the usual way. We can guarantee his missionary salary at this end.

"Our present dentist, Dr. Scheifley, will be going on furlough next fall (1920), and it is very important that a man should come as quickly as possible so as to get some of the language and be fitted into the work before Dr. Scheifley leaves."

Particulars regarding qualifications, remuneration, etc., will be furnished to anyone who wishes to consider responding to this call. There is probably no more attractive and no larger field of service in the Orient for the Christian dentist, who wishes to invest his life where it will count for the most, than this position in connection with the large and growing Severance Union Medical College in Seoul. For information communicate with A. E. Armstrong, 439 Confederation Life Building, Toronto.

Editorial Notes

Dr. A. V. Cole has resigned from the dental staff of the Winnipeg Hospital.

⁂

Dr. M. H. Garvin, Winnipeg, visited Toronto for a few days recently on his way to Florida, where he expects to stay for two months.

We acknowledge the receipt of a leaflet on the organization of the Navy League of Canada.

❧

Gradually the dental clinics for M.D. 12 will be reduced until about March. when only one will be in existence, and shortly thereafter this one will cease.

❧

The staff at all points is being reduced owing to the work dropping off, and it is expected that very little will remain to be done by the end of March, 1920.

❧

Yorkton clinic was closed December 20 and Moose Jaw December 31, leaving only four, Swift Current, Prince Albert, Saskatoon and Regina in operation.

❧

Three officers of the local clinic have been relieved from further service. They are Captain Schweitzer, Captain McDonald and Lieutenant Robertson.

❧

Dr. N. S. Jenkins, who practiced dentistry in Dresden, Germany, for many years, died in November, 1919. Dr. Jenkins introduced the use of low fusing porcelains into dentistry.

❧

The dental profession of Ontario, and especially of Toronto, regret the death of C. S. Butler, Buffalo. Dr. Butler delivered an eloquent address at a banquet to the late J. B. Willmott a few years ago. Every dental visitor to Buffalo never failed to be impressed with Dr. Butler's personality.

❧

It will be observed in the report (on another page), of the proceedings of the General Medical Council, that the latter has accepted a number of "Applications for Exceptional Registration," in accordance with the provisions of the Dentists Act. With one or two exceptions, the gentlemen so admitted to the Register are graduates of the University of Toronto. A certain number of applications were rejected, as not admissible under the terms of the Dentists Act, the result being, as Sir Charles Tomes pointed out, "to rule out many qualifications which, on their merit" might commend themselves to the Council. It is much to be regretted that, among those whose admission to the Register the Council was thus obliged to negative, was Dr. Kazanjian, whose "good work during the war" the Council recognized; but according to their legal advisers they were powerless to act otherwise.

PAIN DUE TO INCOMPLETELY CALCIFIED THIRD MOLARS

Winnipeg, Dec. 29, 1919.

Dr. A. E. Webster,
240 College St., Toronto, Can.

Dear Doctor:

Re the case reported in your last issue wherein the anterior teeth were affected. Having had a very similar case under treatment, and having effected a relief of conditions, I am reporting, that possibly it may help a little.

To make a long story short, I extracted the second molars as was done in your case, but found relief temporary only, and so diagnosed the pain as due to the calcification progessing in the roots of the third molars. We know, and the radiograph will show, that the calcification is not complete until three to five years after eruption of the third molars, and especially in females where the inferior dental canal is in closer proximity to the roots of the molars, it (the nerve trunk) is more easily affected, and the pain is, of course, referred to the distribution area.

The treatment consisted in the removal of the third molars. I first tried exposing the occlusals and packing, but to no avail. Conductive anaesthesia was employed and the diagnoses thus sustained by the examination of the blood-free field after the extraction.

Yours sincerely,
H. J. Merkeley.

BOOK REVIEW

Child Welfare and the Teachings of Certain Dentists, Medical Officers and Other Medical Men. By J. Sim Wallace, D.Sc., M.D., L.D.S. Published by Bailliere, Tindall and Cox.

This is another of Sim Wallace's little interesting books on dentistry. The first chapter discusses nature's methods of keeping the mouth and teeth clean, and the next chapter covers the subject of diet in relation to a clean mouth as well as dental caries. The author arrives at the conclusion that dentists should not undertake the teaching of dietetics or the physiology of the normal functions of the mouth. In the first place it is not their business, and in the next place physiologists and dietitians, as well as the public, will pay but little heed to what dentists say. He pleads for the physiologist to study the functions of the mouth, teeth, glands, secretions, mucous membranes, and actions of muscles. In other words, to teach oral hygiene as a physiological process.

Among the many interesting statements in the book is one that saliva is not for digesting foods, nor is mucus for lubricating a bolus of food. These secretions are essentially for cleaning the mouth. This book, like the others, is most entertainingly written. It is direct, simple, instructive, authoritative, and should be read by every dentist in any kind of public service.

ALUMNI SOCIETY OF THE DEWEY SCHOOL OF ORTHODONTIA

The next annual meeting of this Society will be held on April 1, 2, 3, 1920, at the Edgewater Beach Hotel in Chicago.

The usual high standard of the meetings o fthis Society will be maintained. One half day will be devoted to clinics.

All interested in orthodontia are cordially invited to attend these meetings.

George F. Burke, Secretary.
741-45 David Whitney Bldg., Detroit, Michigan.

Prest-O-Lite

THE IDEAL PROCESS
for the Dental Laboratory

IN the dental laboratory, it is necessary to utilize a flame that will produce a degree of heat sufficient for casting gold, and at the same time produce a heat favorable for soldering crowns, bridge work, metallic plates, melting gold scrap, etc., in the least amount of time and with the greatest degree of efficiency.

Prest-O-Lite gives all the heat required, is perfectly safe, the flame is easily controlled, and its cost of operation is very low.

Even in localities where artificial gas is to be had, Prest-O-Lite is being used in preference on account of the greater range of heat values that are obtainable.

Write for Literature. Address Dept. C-110.

Prest-O-Lite Company of Canada
Limited
Prest-O-Lite Bldg., cor. Elm St. and Centre Ave.
TORONTO
Branches at: Toronto, Ont.; Merritton, Ont.; Shawinigan Falls, P.Q.; St. Boniface, Man.

Dominion Dental Journal

VOL. XXXII. TORONTO, FEBRUARY 15, 1920. No. 2.

Original Communications

CONSERVATISM AND RADICALISM IN DENTAL TREATMENT

Dr. C. J. Lyons, Ann Arbor, Michigan, addressed the Toronto Dental Society on what many dentists of to-day think to be the greatest question in dentistry. Like every great question, it cannot be settled by the say-so of one person. There are many dentists, especially in the Eastern part of America, who seem to think that almost any tooth root can be preserved and made useful and safe to keep in the human mouth. It would seem to be only a matter of medication and mechanical technique. In the Western portions of the continent the opinion seems to prevail that no tooth which has lost its pulp is safe to be kept in the mouth, and, in fact, many vital teeth are removed to clear up either an acute or chronic gingivitis.

Between these two views Dr. Lyon took his course. If he were asked what to do with rarified areas at the apexes of roots of teeth, he would say he didn't know; but would base his opinion on many factors—family history, personal history, dental history, general resistance of the patient to infection, the condition of the peridontal membrane, and the value of the tooth to the patient. One of the notable factors in the treatment of disease of the past few years is the intimate relation between disease in one part of the body to disease in another part. A patient cannot have diseased teeth without their effect on other tissues or organs. In future the good dentist will be the good diagnostician. A patient who is suffering from some form of focal infection, must get a thorough examination which will include not only all the common locations of such infection, but also many of the more remote places. Among the common locations may be the pelvis, including urethra, bladder, tubes and ovaries, the gall bladder, the intestinal tract, the tonsils, mouth, teeth, and sinuses of the head and face.

The essayist pointed out that the vital statistics of the United States showed a gradual decrease in the death rate from typhoid fever, smallpox, scarlet fever, and tuberculosis, with a marked increase in the death rate from chronic circulatory diseases, blood, heart, kidney.

Though many physicians looked upon pulpless teeth as foreign bodies, the essayist took positive ground that such teeth are not dead teeth while the peridontal membrane remains normal.

There are three factors to be considered before deciding on a conservative or radical operation: (1) The extent of the pathological involvement; (2) The physical condition of the patient; (3) The possibility of filling the root canal. There are two methods open to the operator in favorable cases—root resection and medical treatment. Resection is only suitable for single rooted teeth. Sometimes a single molar root may be removed as a temporary expedient. Root resection in molars is not looked upon favorably.

The essayist asked that the very closest co-operation should exist between the dentist and the general practitioner.

In Dr. Lyon's remarks reference was made to the work of Dr. Rickert on methods of reducing silver to cover root ends where resection had been done. We quote in part the methods presented by Rickert to the Michigan State Society.

ADVANTAGES AND DISADVANTAGES OF REDUCED SILVER IN DENTAL THERAPEUTICS.

This paper is offered at this time, because of the large number of inquiries made during the past year, regarding the merits of the so-called silver reduction method as applied in dentistry. At the several district meetings at which we recently appeared, about the first question asked was for an expression regarding this treatment.

For a number of years we had been interested in reducing silver in different types of teeth, not then having in mind so much the possible therapeutic application, as a study of the variation in physical constitution of the several tooth tissues. Naturally this information, with the general knowledge of the sterilizing properties of silver, and with the extraordinary tolerance of the tissues toward silver, added especial interest to the sweeping claims recently made by Dr. Percy Howe of Boston.

Many of you have tried this modern Panacea and found it extremely irritating. We too made up the solutions as recommended and admit that nothing we ever blundered in gave us so much embarrassment as those days of suffering on the part of the patient victims. To this date we hate the ring of a telephone because it recalls that voice, "What shall I do, for I just can't stand this thing any longer." The fact of the matter was that there was nothing one could do but resort to general sedatives for these irritations usually lasted from thirty-six to seventy-two hours, during which time the suffering of the patient was very severe.

Now we are in no way trying to minimize the importance of the conscientious work of Dr. Howe, for we recognize that he has pointed out the possibilities of silver in dental therapeutics and certainly few subjects have recently aroused the interest of the profession to a greater degree than the one of silver reduction. If we were to criticize the above efforts, which is not the purpose of this paper, our criticism would be simply this, that judging from our experience with it, it is too sweeping in its claims, somewhat misleading, and too much like magic to be true.

The recruits on the side of promiscuous extractions have been, during the past year, increased at an alarming rate, those of us who have been trying to keep in the middle of the road are grasping at every straw for more positive methods, many operators are willing to try anything, for this reason no method should be given unqualified approval until such methods have been thoroughly tried. My own experience with Dr. Howe's method as suggested in his original paper is evidence of the harm that may come by giving out a misleading technic. Radiograms of the cases of extreme irritation of over a year's standing are not at all encouraging. Dr. Howe tells us that it is unnecessary to put any of these irritating solutions through the teeth. He infers that by placing a small amount into the pulp chamber, it will be carried just to the end of the canal and not through. My experience has been somewhat different, possibly due to less operative ability on my part.

We have not always been able in the mouth or in most extracted teeth where the apical foramina were sealed, to have absolute control of the end point. In situ, it will either not go quite to the end or, if carried into the canals with broaches, it will go through. Evidently then it was necessary to modify the treatment so that if a small amount did pass to the periapical tissue, it would not be so irritating. Unless we are able to completely fill canals to the end we are defeating the very purpose we desire. We might as well use any other filling material if filling as far as possible were sufficient. One need only examine the illustrations accompanying Dr. Howe's paper to observe that Dr. Howe filled to the end in extracted teeth, but some of those treated in the mouth show little or no silver at the apices.

For the benefit of those who are interested in knowing to what extent we have been able to verify Dr. Howe's seven applications, a brief discussion of the several claims will be given at this time. Quoting from the original paper—application number one: "It is effective in the sterilization of disintegrated dentin overlying pulps as in large cavities of carious first molars."

The treatment has been modified so that cases of a year's standing give promise of developing into a sound technic. After careful bacteriologic tests we know, at this time, of no surer or better way for the sterilizations of infected dentin. The technic used will be given later in this paper.

Application number two: "By this method it is possible to completely sterilize not only a putrescent pulp without removing it, but also the dentinal structure as well."

We have proven that it is possible to sterilize such pulps but for reason to be given later we question its application in practice.

Application number three: "In acute pericementitis following the death of the pulp, it is only necessary to pump this material into the pulp chamber and into the canals as well as possible and close the tooth. The pericementitis in such cases as we have treated, has been quickly allayed and a subsequent and more thorough treatment has apparently ended the trouble."

We have been unable to substantiate this statement. Judging from the reports of an enormously large number of operators, it is easier to believe that it has caused more cases of pericementitis than it has allayed.

Application number four: "We have found it effective in the treatment of chronic abscesses." We have learned from bacteriologic test and clinical observation, in both temporary and permanent teeth that silver is not well adapted to sterilization of periapical tissue, other treatment should be used and silver depended upon to fill the apical foramina and sterilize the dentin.

Application number five: "We believe this to be an admirable means of taking care of apical foramina in all cases if properly used."

Our findings have been in accord with the first part of this statement, but we are not ready to justify its use in all cases as suggested in the second part of claim five.

Application number six: "It is an excellent means for almost painlessly removing the remaining part of a pulp, after the death or removal of a portion of it."

As to this statement we have little to say for we have had no occasion indicating its use. It will probably accomplish what is claimed for it, especially if the reducing agent is formalin. Formalin and certain of its compounds will do the same thing. We question, however, the promiscuous use of such drastic treatment in uninfected teeth.

Dr. Howe's seventh claim: "Applied to the root ends after apioectomy it lessens the probability of subsequent trouble."

A number of cases of a year's standing under our observation are evidence that if properly applied there are several good reasons for this procedure. A discussion of the technic of the same will be taken up later.

Our conclusions regarding the several silver treatments are based first, on some well established therapeutic and bacteriologic principles. Second, on clinical observation; third and last, laboratory experiment. It will be evident that the time for clinical observation has been limited. Our cases of longest standing are only of fifteen months' duration. Years only will verify whether or not our deductions are absolutely sound.

This is a day of preventive dentistry, for this reason the preventive applications of reduced silver will be considered first. The simplest conditions indicating silver for prophylactic reasons are areas susceptible to caries in temporary teeth. We next have the small cavities where it is impossible to do ideal work. In such cases one may, by a little care, inhibit further development of caries. You have all seen small cavities into which silver has been reduced years previous, in which there has been no further decay. In to-morrow's clinic sections of teeth will be exhibited, showing the resistance toward weak acids where dental structures have been impregnated with reduced silver, as compared with untreated sections. Now, in the treatment of these conditions, the amoniacal solutions offer no special advantage over an ordinary silver nitrate solution.

Likewise sections of teeth will be exhibited intending to demonstrate that the latter is even to be preferred because of its greater penetration in conditions where the protoplasmic processes of the dentinal tubules have been destroyed; where this is not true the amoniacal solutions penetrate farther. Silver nitrate is less easily reduced from its cold solutions than the amoniacal solutions and consequently penetrates further in dentin before being reduced by the action of light and organic matter, providing the protoplasmic processes have been destroyed. We have repeatedly demonstrated in our studies of permeable membranes, the impermeability of dental tissues in which there has been a reduction of silver. Dentin and enamel thus treated become clogged with silver, consequently are not so easily affected by chemical action.

Before giving details of technic of the several applications where reduced silver has, in our hands given a measure of success, several terms to be used later will be defined.

SLOW REDUCTION.

By this term you are to understand that a number of days are required before reduction to the metallic state is complete. By rapid reduction we imply that the reduction is more or less complete in a few minutes. In our experience there are indications for the use of one or the other of these distinctive types of reduction.

A few years ago it was our practice either to devitalize or to extract teeth from which we were unable to remove all decay because of proximity to the pulp. For reasons which need no discussion here, we are making more strenuous efforts for the conservation of healthy pulps. The treatment we are about to describe for the above condition has been applied in a large number of cases. Pulps of this kind treated fifteen months ago that were recently tested were found to be in excellent condition. Results of a large number of more recent treatment are also very encouraging. The treatment used is as follows: First apply the rubber-dam, then prepare the cavity so that there is a sound enamel wall. Remove soft and infected dentin avoiding too near exposure of the pulp. The dentin must be cut so that there will be some firm dentin in the line of force of mastication for the cement to rest upon. The cavity is dried avoiding excessive heat. The cavity is then ready for the rapid reducing silver, the preparation of which will be described later. By a little care the silver may be applied without discoloring the margins. Eugenol or even dentalone, may be used as the reducing agent which should be applied several minutes after the silver solution. The excess should be removed and the treatment repeated several times. The excess is again removed and the wall in close proximity to the pulp is slightly moistened with eugenol and this area is covered with a thin layer of dry zinc oxide which is easily held in position by the moist surface. The reason for the latter is twofold: It insures complete reduction of the silver near the pulp. This shortens the time, which is very essential of serious irritation. The zinc oxide admits of a thinner mix of cement, consequently close adaptation is made possible without pressure to the frail pulpal wall. There is no irritation because of excess phosphoric acid, for such excess is taken care of by the layer of zinc oxide. After capping with the cement, the cavity is ready for whatever restoration is desired.

While we are not giving this treatment as a finished method, it is safe to say that results of a large number of cases for the limited time we have had in which to observe such results has been very satisfactory. Careful tests should be made to make certain that there has been no serious degeneration of pulp preceding this treatment. If formalin is used for the reducing agent, it must be very dilute and enough silver solution must be used to insure complete decomposition of the formalin. The cavity should be treated with sodium bicarbonate to neutralize the acidity following the reduction with formalin. This, however, is unnecessary where essential oils are used as the reducing agent.

The silver solution used for rapid reduction is made up as follows: Silver oxide is precipitated from a silver nitrate solution with KOH or NaoH. This is carefully washed to remove all impurities and kept moist in a small amber colored bottle. In this condition reduction is so slight that we have kept it for a long time without much change. If a small amount is insoluble in excess of ammonia, there has been too much reduction and the silver oxide should be freshly prepared. This is our stock solution and it will be seen that it is more desirable than the ammoniacal solution made from silver nitrate, because it is free from nitric acid and other impurities.

Now when we desire rapid reduction as in a pulp capping or root resection, the silver oxide is added to a drop or two of ammonium hydroxide to the point of saturation. In this state the amoniacal solution is easily reduced. The ease with which reduction takes place with this solution is so marked that even burnishing with a warm glass rod is sufficient to reduce to the lustrous metallic silver. There is one precaution that must be mentioned here. That is that after a few hours, fulminates of silver may be formed from the ammoniacal solutions, which are very explosive. I have taken old solutions of both Dr. Howe's and my formulas and incompletely reduced the same in teeth or on blotting paper, both producing explosions on being touched with a hot platinum wire or by use of the electric current. Serious accidents are possible from even wet solutions. Only very small amounts of ammoniacal solutions should be made and the unused portion discarded immediately after treatment. After complete reduction there is no danger and only old ammoniacal solutions, especially after drying, are to be avoided.

The filling of apical foramina deserves especial attention. The possibility of filling difficult canals with reduced silver, providing the irritating properties were eliminated, prompted investigation as to the cause of irritation. The following experiment is an explanation of the probable cause. An ammoniacal solution of silver was reduced with formalin, another with eugenol. The freshly reduced silver is filtered and reaction of the filtrate tested. The filtrate from the formalin reduction is at first strongly acid, but on standing a few hours or on heating the acidity is diminished.

Now if by the aid of a needle, a little of this filtrate is passed beneath the skin, it will produce a smarting sensation not unlike the bite or sting of certain insects. Since formic acid has been demonstrated in the secretions attending such stings, one would be inclined to suspect formic acid in the above mentioned filtrate. The filtrate where eugenol is the reducing agent does not produce the smarting sensation. Time did not admit of more elaborate tests and the specific acid is by no means proven by this simple test. The experiment was evident that the amount of formalin should be diminished far below the amount suggested in Dr. Howe's paper. A large number of cases in which the formalin was diminished and eugenol or dentalone and sodium carbonate were substituted, there was no irritation. That there are objections to this technic must be evident because we are introducing too many elements not silver. We are aware of the fact that elimination of the formalin probably diminishes the antiseptic properties. A large number of cases do not require so powerful an antiseptic. The dentin may be filled equally well with the rapid reducing method suggested for nearly exposed pulps without the serious irritation which we have learned to fear more than a few undestroyed bacteria in the remote recesses of the dentin. One advantage of reduced silver for canal filling over other methods is that it does away with the danger of over-instrumentation to accomplish complete filling. There is a reason to believe that over-instrumentation has been the cause of a great deal more trouble than most operators are aware of. It is unnecessary, if reducing silver is used, to work as close to the apex as required by other methods.

Then ammonia has also been the cause of some of the irritation. There is no doubt that careful preparation of the solutions will prevent this. Infected periapical areas should be treated by methods that have given seemingly good results in the hands of the individual operator. The dentin and apical foramina may be filled with silver after careful cleaning of the canals. Short softened pieces of gutta-percha points are then packed into the enlarged portion of the canal. Where more drastic treatment is required than is possible by the above method, surgical aid, either extraction or root resection seems to be the only avenue of escape at the present time. Numerous tests have demonstrated that silver and formalin will, if properly used, sterilize the canals and dentin of infected roots, but that this sterilization is limited to the tooth and not to tissues far beyond the root has also been repeatedly demonstrated. We have on exhibition a tooth recently extracted in which the canals were filled fifteen years ago with copper. There was no discomfort or evidence of infection. The crown had broken down so that only the copper-impregnated roots remained. This is a fine illustration of the tolerance of tissues to copper. The roots were jet black, resisting for fifteen years the action of body fluids. What copper will do we believe silver will do better.

The possibilities of reduced silver in the preparation of roots for resections, seem to give most encouraging results. The following technic is the one used preparatory to resection. The canals are opened, using the rubber-dam where this is possible, and the silver solution is introduced to the very apex. Five or ten minutes are then allowed for penetration before the reducing agent is applied. This treatment is applied several times. There is no objection to the use of Dr. Howe's solutions for this operation, because the endangered apical tissue is to be excised immediately following the filling of the canals. The canals are very carefully packed with small pieces of gutta-percha points softened by gently heating. The root is resected and the resected end dried as well as possible and silver, by rapid reduction, is reduced and burnished over the resected end. The latter treatment is essential because dentin is poorly adapted to resist the action of body fluids and, experimentally at least, this procedure prevents resorption. Then too, the silver prevents the exposed softened dentin from becoming infected in the healing process and to later renew the trouble. It also forms another barrier to subsequent infection from the root-canal. It will be evident that after healing of such resections it becomes difficult to have patients submit to the necessary means for obtaining material for bacteriologic tests. We have made but one such test and that was found to be sterile. While this proves nothing, it is at least favorable evidence.

The necessary length of this paper prevented the addition of the chemical and bacteriologic tests made in investigating the possible uses of silver in dental therapeutics. These, with other methods that are under observation, will be presented in another paper to appear later.

A SUMMARY.

The possible advantages of reduced silver would suggest its use for prevention of caries, the protection of nearly exposed pulps, the possibility of filling certain tortuous canals, and preparation and treatment in root resection.

As to the disadvantages, the instability of the solutions, the discolorations attending its use, and possible irritations are the most important. While these disadvantages are subject to control, they offer no encouragement in root-canal work to operators desiring a method infallible in careless operations. The fact that silver solutions properly reduced will sterilize should not be depended upon to admit of less care than that required by other methods. We caution operators not to be over-confident in the sterilizing properties of silver, and take too long chances. There is already evidence that this has too often been the case and serious results are certain to follow.

It is to be regretted that the substance of this paper could not be more constructive and less destructive but, unfortunately, this could not be avoided for the proposition as to the disposition of pulpless teeth is not an easy one. It is and has been seriously studied by a large number of men of genius and ability, and as yet no one has been able to offer us anything that is safer than extraction. We recently made a study of a large number of treated pulpless teeth which was convincing in two respects. First, that the evidence is overwhelmingly against poor root-canal surgery, and the second, that which at this time concerns us most is the fact that the evidence is not overwhelmingly against good root-canal surgery. In fact, it is evident that it is not an impossibility to safely treat devitalized teeth, and that we have failed only because we have not as yet a method of treatment that is easy enough of operation to be universally adopted in practice. Then there is but one course for the operator to pursue. That is to play safe and study each case carefully. If conditions are favorable and the skill of the operator is such that a perfect root filling can be inserted, this is certainly the better course. But if conditions are unfavorable and the operator realizes that he cannot do a safe operation, then there is only one thing to do. That is to remove the tooth rather than jeopardize the general health of the patient. For not only the reputation of the individual operator, but that of dentistry is at stake.

ANAESTHETICS AND THE DENTAL OFFICE

J. M. Magee, D.D.S, L.D.S., St. John, N.B.

One of those accidental deaths which occasionally shock the profession in the community in which it occurs, recently happened in St. John, N.B.

The patient, a very fat and very flabby man, who on previous occasions had given most pronounced evidence of cowardice, applied for the removal of a molar root. He refused to submit to any pain whatever, no matter how insignificant, and in company with his family physician reported by appointment at the dental office under pre-arrangement for chloroform anaesthesia.

The patient died in the chair.

A coroner without making any enquiries concerning the case ordered an inquest, and it would appear from the discussion that took place that because death occurred in the dental chair, he considered the dental chair was responsible. In his charge to the jury he asked them to condemn the practice of administering a general anaesthetic such as ether and chloroform in dental chairs. This the jury refused to do.

The evidence in the case revealed the fact that everything seemed to be going along smoothly; the patient in his hallucination babbling about matters relevant to his occupation, when suddenly he stopped talking. He stopped breathing at the same time, and he did not resume it. The pulse continued, however, and as he failed to respond to the customary stimulus to the diaphragmatic region to again breathe, artificial respiration was immediately resorted to, but without avail. The pulse ceased to beat in about ten minutes.

No attempt was made at operating, because the anaesthesia had not yet reached the stage profound enough to warrant it.

The verdict of the jury naturally exonerated the dentist, but, because death occurred in the dental office, the thoughts, and in many instances the conversation of "knockers" in the community have been unfairly turned on him. Every sensitive man knows what even a disdainful glance and an uplift of brow can convey.

In medical circles the question of anaesthesia in hospitals had been under vigorous discussion for some time, and this particular accident having happened with one of the medical practitioners, it was considered an opportune time to discuss very freely the entire matter of anaesthestic. With that object in view, the St. John Medical Society sent an invitation to the St. John Dental Society asking for a conference with a committee from the ranks of the dental profession to meet them in regular session.

The meeting took place on the evening of December 10th, and a pretty free discussion ensued. The argument made by the medical man is this:—In all cases where ether or chloroform is to be administered the patient should be under surveillance for 24 hours at least, and an examination of the urine in addition to the physical examination should be made. If death is not even a remote possibility, there is grave danger in all cases where general anaesthesia is undertaken in the dental office. In the first place, the patient is usually fully dressed, with perhaps the exception of the removal of corsets. Should any unfavorable symptom arise, the chair is not an advantageous piece of furniture in which to handle the patient.

There is no question but that, once the patient is anaesthetized, the chair offers opportunity to perform the dental operation incomparatively superior to a bed or couch or even the operating table.

After operations, it is the exception rather than the rule, to find a rest room properly equipped in which the patient may remain under constant supervision of an attendant until recovery is complete.

Usually she is to be conveyed to her home, where she is put to bed.

Controverting this the dentist states that there are many things to be considered, which the medical man in discussing the question, does not take into account.

In the first place, these cases are oftener emergency cases than otherwise, and must be treated with the same degree of intelligence that the medical man uses when facing any emergency call.

It frequently is not possible to make ante-operation arrangements for admission to a hospital, and even if it was possible to do that, the question of time and expense oftentimes would be more than the sufferer could meet.

In the second place, the vast majority of those who require general anaesthetics for this purpose are in ordinary health, and the physician usually has little doubt about deciding if the case is favorable or unfavorable.

If unfavorable, the fact that anaesthesia was demanded in the dental office would not be the determining factor, any more than it would be the determining factor if the same individual applied at the physician's own office and requested ether or chloroform for some small operation. In favorable cases, where the question of time and expense are serious problems, it is no uncommon thing for anaesthetics to be administered in the physician's private office under conditions, so far as the chair is concerned, less favorable than those in the dental office, and under identical conditions as far as clothing is concerned, to say nothing of assistance.

Some of these very physicians who scathe the dental chair have been known to administer chloroform to perform surgical operations alone, and on a chair less suited for handling the patient should untoward symptoms arise.

Every reasonable dentist recognizes that a perfectly equipped rest room has much to commend it. If, however, in an emergency following an operation, a patient has for a time to lie on a lounge in the office, it becomes chiefly a matter of inconvenience to the dentist, who is prevented from carrying on his work for other patients.

When the time, which we are all looking for, when preventative dentistry shall eliminate the altogether too numerous extractions, there will be no need to call physicians in emergency into our offices to administer chloroform or ether.

Even now there need be fewer offices affected by these emergency demands if a specialist in extracting would receive the support of his confreres so that in consideration of their directing extraction cases to him, he would be enabled to furnish an establishment comprising up-to-date rest rooms and every other feature essential to the comfortable treatment of patients, before, during and after all kinds of operations for extractions.

In the particular case referred to the coroner apparently conceived the idea that the accident of death presented an excellent opportunity to express his private opinion (which, by the way, is not the generally accepted opinion of the entire medical profession) of damning the dental chair through the findings of his jury. Had he made enquiries of the family of the unfortunate patient, of the attending physician, and of the dentist in whose office the death occurred, he would have found no grounds whatever for the necessity of an inquest.

The dental law of New Brunswick is explicit regarding the use of ether and chloroform. No one shall administer ether or chloroform in the practice of dentistry except "by the consent, in the presence, and under the direction of a duly authorized medical practitioner."

As a result of the discussion which took place, a committee composed of two representatives of the Medical Society and two of the Dental Society are to discuss the matter in detail, considering the hospital, the special private extracting infirmary, and the individual dental office in which all classes of dental operations are being carried on, and to report at a joint meeting of the two societies at a future date.

The recommendations of this committee while they can bind no one, will undoubtedly help to bring both professions closer together and assist in exercising the devils of prejudice and ignorance which still exist in the land.

DENTISTRY IN GREAT BRITAIN AS FOUND BY A COMMITTEE OF THE HOUSE OF COMMMONS

(Continued from December Issue).

It has become quite apparent that between the ages of 18 and 25 dental caries is very active.

From the age of 30 upwards the more or less chronic condition is reached—there is a slowing down of the process of active caries—"dead teeth" and "stumps" accompanied by oral sepsis are prevalent in varying degree and "empty" mouths through periodical extractions for the relief of pain, etc., became increasingly common.

NORTHERN COMMAND.

The general condition of the teeth of men joining the Army is deplorably bad. With the exception of men recruited from the upper, and to a certain extent, the middle classes—and, it might be added, members of the Colonial Forces—there is almost an entire absence of appreciation of the importance of clean mouths and care of the teeth. The percentage of men who show evidence of a daily use of the tooth brush is very small, numbers frankly stating that they have never used a tooth brush in their lives; and the proportion presenting with active and wholly neglected dental caries is extremly high. There is a marked want of appreciation of the importance to health of maintaining an efficient masticatory apparatus by conservative treatment of carious teeth. With the exception of the classes above referred to, there is almost an entire absence of previous dental treatment, other than the extraction of teeth for the relief of pain, or of decayed front teeth to be followed by dentures for æsthetic reasons. As would be expected, therefore, the condition of the teeth is found to be progressively worse in proportion to the age of the recruit.

It has been noted that men drawn from industrial centres present a worse dental condition than those from agricultural districts.

The benefits of dental treatment inaugurated by the Board of Education for school children is not yet appreciable in men recruited for service, doubtless owing to the fact that these School Dental Clinics have only comparatively recently come into existence and that attention was concentrated on the treatment of children between the ages of six and nine years.

The Inspector of Dental Service of the Northern Command directed a special inspection of 1,800 recruits with a view to classification of dental defect in age groups. The figures obtained were as follows:

	Age Groups 18 and under	 19-24	 25-29	 30 and over
Per cent. of men examined with all teeth sound..	19.8	4.9	4.1	3.2
Per cent. of men examined with decayed teeth..	64.0	84.0	83.2	80.7
Average No. of decayed teeth per man..........	4.5	7.3	6.9	6.5

From the point of view of Public Health, most of the men examined would require dental treatment. The percentages of those who could be considered as "dentally fit" from the Public Health standpoint, compared with those who, under the present Army standard (under which only the minimum of treatment which will enable a man to masticate, and under which of necessity, many teeth which are savable are allowed to become unsavable), were actually passed as "dentally fit"; and are shown in the following table:

Dentally fit.	18 and under.	19-24.	25-29.	30 and over.
	Per cent.	Per cent.	Per cent.	Per cent.
Public Health Standard	33.0	10.3	13.0	14.0
Army Standard	57.0	49.0	52.0	54.0

76. The memorandum affords valuable confirmatory evidence of the statements made to the Committee by witnesses as to the deplorable state of the teeth of the people.

Having regard to the large amount of preventable sickness and chronic invalidity terminating in many instances, in premature death which results from the effect of oral sepsis and decayed teeth, the Committee veiw the facts which have been brought to their notice with the gravest concern. They are of opinion that the state of affairs revealed should receive early attention with a view to the improvement of the health of the nation and an increase in its industrial efficiency.

SECTION VI.—SHORTAGE OF REGISTERED DENTISTS.

77. In considering whether there is any shortage of registered dentists and, if so, the extent of that shortage, the Committee have been greatly aided by the replies received, in response to a circular letter of enquiry from the Committee. from various bodies representative of the registered and unregistered practitioners and of the medical profession. The Committee have also received much valuable evidence from certain insurance committees and approved societies who re-

plied to a questionnaire circulated by the Committee. The evidence of individuals, especially Mr. W. C. Anderson, M.P., Professor Sidney Webb, Dr. J. Robertson, the Medical Officer of Health of Birmingham, Dr. Lewis Graham, the temporary School Medical Officer to the Birmingham Education Committee, and Dr. Jenkins, the Medical Officer of Health and School Medical Officer of the Rhondda Urban District Council, has been most helpful. The Committee have no doubt that they are in possession of information which enables them to form a reliable opinion on this part of their Reference.

78. Sir Donald Macalister has furnished the Committee with statistics relating to the dental register, which includes the names of all persons entitled to describe themselves as dentists. At the time of its institution in 1879 the register contained 5,289 names, of which 4,006 were admitted in virtue of having been in practice before 1878. In the Dentists' Register for 1918 the figures are 5,524, of which 4,214 represent licentiates and other qualified persons, and 1,281 persons admitted by virtue of being in practice in 1878. During the intervening years the number of names added practically remained stationary, the number of new names added being just sufficient to make good the names removed. Sir Donald pointed out that this stagnation of the Dental Register has been accompanied with a considerable increase in the demand of the public for dental attention and the establishment of public dental services, such as the school dental service. He stated that doctors are more and more sending their patients to qualified dentists, as the medical profession have increasingly felt the importance of sound teeth.

79. The population of the United Kingdom has in the interval between 1878 and 1917 increased by 37 per cent. without any corresponding increase in the dental register. On the average one registered dentist in 1879 sufficed for a population of 6,500, whereas in 1916 the population served had risen to 8,500 per registered dentist. It has to be remembered, however, that following the institution of the 1879 register all the practitioners of dentistry, qualified or unqualified, were admitted to the register, and, therefore, that the register at that date was really a register of nearly every person practising dentistry, and included the names of practitioners comparable with the unregistered practitioners of the present day. A present-day register to compare with that of 1879 should include the unregistered as well as the registered practitioner.

80. Mr. Norman Bennett, on behalf of the British Dental

Association, emphasized in his evidence this difference in the qualifications of the individuals whose names appear in the 1918 register with those who were registered in 1879. The very large proportion of the persons whose names appear in the 1918 register are instructed and trained dentists, licentiates in dental surgery. The persons whose names appear in the 1879 register were not so trained.

81. The Incorporated Dental Society, and others, have, for comparative purposes, specially directed our attention to the growth in the number of names appearing on the Medical Register. The Society supplied us with the following comparative figures:

United Kingdom.

Year.	Population.	Number of names on Medical Register.	Number of names on Dental Register.	Number of Medical Practitioners per 1,000,000 popu.	Number of Dentists per 1,000,000 popu.
1879	34,156,113	22,600	5.289	661	155
1916	46,431.546	43.225	5.453	931	117
Increase or decrease	+12,275.433	+20.625	+164	+270	—38
do. do. (per cent.)	36% (inc.)	91% (inc.)	3% (inc.)	41% (inc)	25% (dec.)

The comparison is a useful one although in some respects the two professions are not strictly comparable. In dental practice the registered practitioner has in competition with him unregistered practitioners professing to treat patients in exactly the same way as he does, to supply the same quality of artificial teeth, and to perform the same operations. Unqualified medical practice does not run on such parallel lines, and is not in such direct competition with qualified medical practice.

82. *The main fact brought out by the figures submitted to us is, however, that during the last 15 years the dentists' register has remained stagnant and there does not appear to be any likelihood under existing conditions of increase in the number of registered practitioners in the near future.* That the present number of registered practitioners is insufficient for the needs of the population is made evident when the distribution of these practitioners throughout the United Kingdom is considered. As would be naturally expected with a deficient supply, the registered dentists are not uniformly distributed. Some portions of the Kingdom are much better supplied than others. Sir Bertram Windle, F.R.S., who appeared before us as one of the witnesses for the General Medical Council gave us some striking figures as regards Ireland

in this connection. In 1915 out of 249 registered dentists no fewer than 169 were in practice in Dublin, Belfast, and Cork, leaving only 80 dentists for the rest of Ireland. In the City of Dublin alone there were no fewer than 109 dentists, while in the County of Kerry there were only 2 registered dentists serving a population of about 160,000 persons. The paucity of registered dentists in Ireland as well as their very uneven distribution was also strongly represented to us by Mr. J. W. Carse, who gave evidence on behalf of the Dental Society of Ireland, a body of unregistered practitioners.

83. The British Dental Association has supplied us with valuable statistics, tabulated in various ways, to show the distribution of dentists in the towns and counties of the several portions of the United Kingdom. The Incorporated Dental Society and the Dental Society of Ireland have also supplied us with statistics bearing on the distribution of dentists. We have had evidence submitted to us which indicates that statistics prepared from directories need much correction, and are not to be taken as necessarily indicating the actual position as regards the supply of dentists available for a particular district or town. In smaller towns it is a quite common practice for a dentist to attend from another district on certain days; some dentists have branches in several towns. In such cases one of two things is likely to happen. Either the dentist is only recorded as serving the town in which he resides, or else he is credited to each town he visits. In the one case the towns which he visits appear in the statistics as not served by a dentist, while in the other case the apparent number of dentists is in excess of the actual facts.

84. There are other reasons why the appearance of a name in a register or directory does not always connote actual practice in dentistry. The most direct evidence we have had in this connection was an enquiry into the number of dentists in Sheffield made in 1915, particulars of which were submitted to us by Mr. W. C. Anderson, M. P. Out of 54 dentists on the register in Sheffield, 16 were not in practice, 2 were fully occupied with school children, 3 were dead, 6 did little or no dentistry, and 3 were in the Army. A paper register of 54 resolved itself into an actual one of 24. The number of dentists actually attending to the needs of a town of 460,000 inhabitants, excluding the school children was in reality only 24 instead of 54. Mr. Anderson also stated, "There are large areas with big populations which are practically without the services of registered practitioners." A striking instance of

such an area is the Rhondda Urban District in Glamorganshire. Dr. Jenkins, the Medical Officer of Health informed us that in the Rhondda Urban District, with a population of 160,000, there was only one registered dentist. It is to be observed that the population of this urban district is mainly composed of colliers who earn high wages, and should be able from a very early age, 17 or 18, to pay adequately for any attention which their teeth might require.

85. Dr. Robertson, the Medical Officer of Health of Birmingham, when expressing the opinion that there was certainly not an adequate supply of registered practitioners in Birmingham, stated that in Birmingham the registered dentists dealt mainly or largely with the middle and better class people. Dr. Wheatley, the Medical Officer of Health of Shropshire, mentioned that in that county, with a population of 240,000, there were only 14 registered dentists, and he estimates that conservative dentistry is only provided for about 10 per cent. of the population of the county. All the representatives of the unregistered practitioners who expressed views on this part of our reference were emphatic that the registered practitioners were unable to meet the existing requirements of the people, especially the needs of the working classes.

86. The memorandum as to "Shortage of Registered Dentists" sent to the Committee by the British Dental Association stated that viewed from the standpoint of public demand it would be difficult to prove that there was any serious shortage of registered dentists at the present time. Mr. Norman Bennett in evidence inclined to the view that the reason why the poorer classes are served by the unregistered dentist is that these classes are not yet accustomed to regard conservative dentistry as really essential to their health, and think of dentistry simply in terms of getting their teeth so bad that they have to be taken out and then having a denture. He did not ascribe the shortage of registered dentists in industrial districts to the relative expensiveness of conservative dentistry and to the inability of the working class to pay the fees charged for this class of work. We were particularly struck with a statement by Mr. Norman Bennett that it was such towns as Cheltenham, Tunbridge Wells, Bournemouth and Eastbourne that were well supplied with dentists.

87. The most direct evidence we had against the view that there was a shortage of registered dentists was furnished by Mr. J. Towart, who gave evidence with Mr. George H. Watson on behalf of the Medical and Dental Defence Union of Scot-

land. For the purpose of preparing their evidence the Union had sent out a questionnaire to every registered dentist in Scotland. One of the questions to be answered was in the following terms: "Is there an inadequate supply of qualified dental surgeons in your district other than that produced by the shortage of mechanics owing to the war?" The replies received to this question were almost unanimously in the negative. In evidence, Mr. Towart explained that the position was that the registered dentists in Scotland were not fully employed, and could actually do a great deal more work with adequate mechanical assistance. He was not prepared to contend, nor did he suggest, that the registered dentists in Scotland could meet all the needs of the population if the unregistered practitioners ceased to practise.

88. The replies received by the British Medical Association to the questionnaire sent out to the divisions (*see* para. 44) elicited information which pointed to a great shortage of registered dentists in some districts. At Nuneaton, Bolton, Dudley, Huddersfield and Monmouthshire 90 per cent. or over of the population are said to consult unregistered dentists.

(To be continued.)

Dental Societies

CANADIAN ORAL PROPHYLACTIC ASSOCIATION FINANCIAL REPORT

RECEIPTS.

To cash in bank January 1, 1919		$ 702.47
Bank interest, 1919		39.47
Lyman Bros. & Co., by cash		3,923.65
John Hargreaves, by cash		3,856.01
Membership fees		46.00
Sale of charts		25.00
Insurance on brushes		8.32
Contra Account—		
Lyman Bros. & Co. Hutax Paste Spadina Military Hospital		7.55
John Hargreaves, refund on overcharge on school brushes	$162.66	
Renewal on insurance policies	60.00	
135 1/6 doz. brushes mailed to dentists		
37 and 25 doz. Kiwanis Club for Davisville Hospital		
51 doz. donations to hospitals and homes, etc.		
8 1/3 doz. Major Roberts, Spadina Military Hospital		
256½ doz. brushes—$1.55 per doz.	401.68	
5 doz. small brushes to Sick Childrens' Hospital	5.60	629.94
Net Profits, 1919—		
		$9,238.40
Total receipts, 1919		$8,535.94
Bills receivable, 1919		3,051.69
		11,587.63
Cost of brushes sold, 1919		3,670.92
		7,916.71
Less operating expenses, 1919		1,553.60
Net profits, 1919		$6,363.11

EXPENDITURES.

Charity and Educational Expenses.

Dental Research Committee, University of

Exhibit at O.D.A. convention		33.57	
Dental educational purposes in Quebec		200.00	
Donation to University of Toronto Memorial Fund		100.00	
Donation to Chengtu Medico-Dental College Fund		50.00	
Hamilton General Hospital, donation on tooth brushes		5.75	
C. Potter (Optician) slides purchased by Dr. Gardiner		2.75	
Donation Hutax Paste Spadina Military Hospital		7.55	
Donation Hutax Brushes: Davisville Hospital, Spadina Military Hospital, Sick Children's Hospital, Charitable Institutions and mailed to dentists		407.28	
			$1,506.90
Operating Expenses—			
Business agent		$359.00	
John Hargreaves, insurance on brushes		90.00	
Secretary's assistant		286.00	
Refund, John Hargreaves, on overcharge on school brushes		162.66	
Meeting Expenses—			
Annual meeting	$40.00		
Committee meetings	27.20	67.20	
Secretary's out of pocket expenses		133.42	
Rent of store room		36.00	
Southam Press for seals		355.00	
Government fee		3.00	
Royal Bank, deposit box		4.00	
Dr. A. J. McDonagh, committee's expenses to Morrisburg		39.65	
Lyman Bros., powder mailed to New York		1.67	
Repairing typewriter		16.00	
			$1,553.60
Loan from Bank of Nova Scotia			1,539.00
To cash in bank December 31st, 1919			4,627.04
Cheques outstanding			11.87
			$9,238.41

Jan. 21st, 1920. Audited and found correct.

Edgar W. Paul.

Statement of Resources and Liabilities, December, 31, 1919.

RESOURCES.

Registered name Hutax and charter for company. .$	350.00
Wall charts, $10.00; school and military charts, $50.00; lantern slides, $75.00; moving picture films, $250.00; typewriter, $40.00	425.00
Registered designs, patents, etc.	535.00
Seals unused—108M—$1.02 per M	110.16
Accounts receivable, John Hargreaves	2,533.29
Accounts receivable, the Lyman Bros. & Co.	518.40
324 gross large Hutax brushes at market price $19.95	6,463.80
Cash in bank December 31st, 1919	4,627.04
	$15,562.69

Soluble Assets—$14,142.53.

LIABILITIES.

None.

EXTENSION COURSES AND LECTURES FOR GRADUATES IN MEDICINE

The Faculty of Medicine of the University of Toronto recognizes that the practitioners of the province are anxious to keep closely in touch with the advances in Medicine, and that they have a claim on the Provincial University to aid them in doing so. The Faculty considers this duty as being second only to the instruction of the undergraduate.

At the moment the rapid advances in knowledge and the many changes due to the war make it impossible for the Faculty to offer set courses of sufficient variety to meet all the needs of those who seek further study. It further considers that the method which is the usual one in England and on the continent will meet the needs if it be administered in a personal and sympathetic way through an advisory committee.

Those who have studied abroad know that the routine method is for the graduate to attend the instruction given to the students of the senior years in Medicine, to follow the ward rounds and to go to the out-patient department picking up what he can. If special instruction is required in order to enable him to follow the clinical work, this is obtained privately from a tutor. The University hopes to improve on this

A standing committee has been appointed whose duty it is to give to any graduate interested, advice as to the clinics and lectures which should be taken and to confer with the heads of departments and individual teachers so as to arrange a course in advance for each applicant. Such a course may be modified by the committee if it does not prove suitable.

The Fifth Year student in Medicine is now receiving the most advanced type of clinical instruction, and his teachers often take advantage of the modern laboratory training given in the junior years and may thus make their instruction somewhat difficult to follow by those who have not had this preliminary training. The teacher will, however, be prepared to explain privately any difficulties, to recommend such books as will clear away these difficulties or through the committee to arrange for some special laboratory instruction.

All the library facilities of the University will be open to any post graduate student under the usual conditions.

The staff fully realizes that every effort must be made to render the visit of each post-graduate student both pleasant and of real value. Instruction may be obtained as outlined above in the following:

Medicine
Surgery
Obstetrics and Gynaecology
Paediatrics
Otology, Rhinology, Laryngology
Ophthalmology
Preventive Medicine
Pathology and Bacteriology

Applicants for courses should remember that the shorter and the more general a course they desire the more difficult it will be to arrange to meet their needs and the more superficial the training that they receive is likely to be, while the longer the period they can devote and the narrower the field, the easier the committee will find it to meet their requirements and the more thorough will be the training.

The University will impose a minimum fee of $10 per month. This will be imposed for any course of less than a month as a registration fee. In such cases where extended work and attention is required, a special fee to cover the same will be arranged by the committee.

EXTENSION LECTURES.

In order to aid medical societies or groups of physicians to keep up-to-date, the committee is prepared to arrange lectures for such societies.

For some time the faculty of the Royal College of Dental Surgeons has had under consideration a similar extension course to the graduates in dentistry, but as yet no definite steps have been taken. The plan of having the graduates collect for post-graduate instruction at Toronto seems to displace any thought of carrying the post-graduate work to small centres. The Department of Agriculture has found it cheaper and more effective to take the instruction to the farmer so as to reach certain persons who need it most. The courses at the college meet a limited demand and usually those who need it least.

BANQUET TO THE C.A.D.C., M.D. No. 2

Over 200 members of the Canadian Army Dental Corps. composed of graduates and undergraduates who enlisted from military district No. 2, were banqueted at the King Edward Hotel by the Women's Auxiliary of the corps. There were present, in addition, about 100 representative civilian dentists who acted in the capacity of hosts.

Dr. F. C. Husband was toastmaser, and seated with him at the head table were: Mayor Church, Col. John I. McLaren, A.A.G.; Lieut.-Col. W. G. Thompson, A.D.D.S.; Lieut.-Col. Guy G. Hume; Dr. O'Sullivan, D.D.S., S.C.A.; Dr. Wallace Seccombe; Capt. Joe Thompson, M.L.A.; Dr. A. E. Webster, Dr. Harold Clark, Capt. R. D. Thornton, Capt. Roy Zimmerman.

The members of the Women's Auxiliary, in recognition of their war work on behalf of the overseas members of the C.A.D.C., were tendered a complimentary supper in an adjoining room, and were invited to pay a "fraternal visit" to the larger banquet hall.

AUXILIARY TOASTED.

Lieut.-Col. Thompson, A.D.D.S., in proposing the toast of the Ladies' Auxiliary, thanked the members of the auxiliary on behalf of the C.A.D.C. for the splendid assistance they had rendered the corps, both at home and overseas. Col. Thompson was followed by Capt. Roy Zimmerman, who referred particularly to the many parcels of generous proportions that had been regularly received while the boys were in England and France. The president of the Women's Auxiliary, Mrs. F. C. Husband, replied on behalf of the members of the auxiliary.

responded to by Col. John I. McLaren and Capt. Jos. Thompson, M.L.A. The toast to the Canadian Army Dental Corps was proposed by Dr. Wallace Seccombe, while Lieut.-Col. Guy G. Hume made a fitting acknowledgment.

Miss Mary Bothwell and Mrs. Harold Box contributed vocal selections during the evening.

ALUMNI ASSOCIATION, UNIVERSITY OF BUFFALO DENTAL DEPARTMENT

Special Post-Graduate Course During
Alumni Week.

April 12th to 18th, 1920.

Radiography.

Dr. L. M. Waugh, Columbia University Department of Dentistry, New York.

Prosthodontia.

Dr. Rupert E. Hall, Chicago, Ill.

Detached Bridge Work.

Major W. E. Cummer, Royal College of Dental Surgeons, Toronto.

Conduction Anaesthesia.

Dr. C. E. Rose. Department of Dentistry, University of Buffalo.

The course is especially designed for members of the Alumni Association. However, all alumni and ethical dentists are eligible to attend.

Fees.

Prosthodontia Course	$50.00
Two Courses (except Prosthodontia)	50.00
Single Course	35.00

Classes limited to thirty men.

The hours for lectures and clinics have been arranged to permit of full enjoyment of the usual social events of Alumni Week.

Apply immediately to

Dr. J. G. Roberts,
174 E. Ferry St., Buffalo, N.Y.

DENTISTS AT THE MUNICIPAL ELECTIONS

Dentists at the recent municipal elections as reported in the Toronto Daily Globe:

Brockville—Aldermen, H. A. Clark, W. H. Woodrow.
St. Thomas—Trustee, F. E. Bennett.
Woodstock—Council, G. Davidson.
Tilsonburg—Mayor, H. McQueen.
Fergus—Council, A. W. Muir.
Caledonia—Reeve, R. M. Berry.

AMERICAN INSTITUTE OF DENTAL TEACHERS

At the annual meeting of the American Institute of Dental Teachers, held at Detroit in January, the following officers were elected:

President—Dr. Arthur D. Black, Chicago.
Vice-President—Dr. Guy S. Millberry, San Francisco.
Secretary-Treasurer—Dr. Abram Hoffman, Buffalo.
Executive Board—Dr. A. H. Hipple, Omaha; Dr. A. E. Webster, Toronto, Ont.; Dr. E. D. Coolidge, Chicago.

PERMANENT DENTAL CORPS IN GREAT BRITAIN

The dental profession expected:

1. The institution of a permanent dental service.
2. The organization and supervision of the service by dental officers.
3. Condition of service as to rank, pay and allowances to be similar to those of the Army Medical Service.

In spite of representation to the War Office along these lines a brief statement has been issued that "the period of engagement will be for one year or until no longer required, whichever shall first happen.

One hears not a word of the status of the C.A.D.C. in the permanent forces of Canada. Is it possible that a matter of such vital importance to the dental profession is being left to individuals to promote or has the national organization the matter in hand? There is no sense in locking the stable after the horse is stolen. It is the civilian dentist who should be active in these matters.

Editorial

EDITOR:
A. E. Webster, M.D., D.D.S., L.D.S., Toronto, Canada.
ASSOCIATE EDITORS:
ONTARIO—M. F. Cross, L.D.S., D.D.S., Ottawa. Carl E. Klotz, L.D.S., St. Catharines.
QUEBEC—Eudore Debeau, L.D.S., D.D.S., 396 St. Denis Street, Montreal; Stanley Burns, D.D.S., L.D.S., 750 St. Catherine Street, Montreal; A. W. Thornton, D.D.S., L.D.S., McGill University, Montreal.
ALBERTA—H. F. Whitaker, D.D.S., L.D.S., Edmonton.
NEW BRUNSWICK—Jas. M. Magee, L.D.S., D.D.S., St. John.
NOVA SCOTIA—Frank Woodbury, L.D.S., D.D.S., Halifax.
SASKATCHEWAN—W. D. Cowan, L.D.S., Regina.
PRINCE EDWARD ISLAND—J. S. Bagnall, D.D.S., L.D.S., Charlottetown.
MANITOBA—M. H. Garvin, D.D.S., L.D.S., Winnipeg.
BRITISH COLUMBIA—H. T. Minogue, D.D.S., L.D.S., Vancouver..

VOL. XXXII. TORONTO, FEBRUARY 15, 1920. No. 2.

WOMEN'S AUXILIARY A GREAT SUCCESS

Each success and each undertaking out-doing all others is the history of the efforts of the Women's Auxiliary to the Canadian Army Dental Corps M.D. No. 2. An organization which developed out of the needs of the war, filled its function far beyond the dreams of its founders and crowned everything by entertaining all the members of the Canadian Army Dental Corps in M.D. No. 2 at a banquet given at the King Edward Hotel, Toronto, January 20th, 1920.

It is well to review the circumstances which brought the organization into being since there is every reason for believing that with the passing of the war the organization will cease to exist.

Immediately after the formation of the Canadian Army Dental Corps it became evident that there were many necessary things required which were not on the lists provided by the Army Quartermaster's stores. It was necessary to have some organization behind the dental corps having the same relation to it that the Red Cross has to the Army Medical Corps. In the beginning the dental profession collected several thousands of dollars which was used in supplying necessities not provided by the Government. It was soon discovered that the wrong people were in charge of the project. Through the good offices of the A.D.D.S., Col. Thompson, a meeting of dentist's wives and friends was held at headquarters, out of which came the Women's Auxiliary.

It would seem that no large organization is capable of looking after all the details required. Generally another organization must take care of the details. The Government at first made no provision for what is now regular equipment. It took from three to twelve months to get every necessary item passed. Here is a good example: Sterilizers were not provided as regular equipment for over a year after the C.A.D.C. was established. There was the greatest difficulty in getting clinics fitted up so that they could be run as surgeries. It was just here the Women's Auxiliary came in. While the department at Ottawa was making up its mind whether a certain clinic should be supplied with a chair or a stool the women gave the order and the chair was supplied. Latterly there were little difficulties along these lines because the dental officers would frankly tell the commanding officers that if they didn't do what was required the women would. Besides supplying actual technical equipment when other means failed they furnished reception rooms, smoking rooms, recreation rooms for officers and men, as well as supplied musical instruments, games and reading matter.

Their activities extended to a personal contact with every officer and man of the C.A.D.C. from No. 2 overseas. They were remembered by personal letters and carefully packed boxes of goodies from home. The families of members overseas were personally cared for by a committee provided for that purpose. Hundreds of boxes and parcels of comforts left regularly from the homes of the dentist's wives and friends.

Naturally so much attention to detail was not done without organization and vital personal attention. It is one thing to judiciously spend large sums of money, but it is quite another to get the money. These women seemed to have every talent from organizing in a big way to collect money to managing the most minute detail in expenditure. Above all they fulfilled their functions to their country, the Army, the C.A.D.C., the officers, the men and the profession. They closed their official activities by kindling in the hearts of the profession a desire to emulate the women, in organization, goodfellowship and devotion to a purpose. The profession and the people of this country are the better for the activities of the Women's Auxiliary of the C.A.D.C.

DISSECTIONS AND DENTAL STUDENTS

The dearth of material for dissections is causing considerable difficulty in the training of medical students and in these circumstances it is not surprising that the Council of the College of Surgeons should have decided to relax the rule requiring dental students to perform dissections at a recognized Medical School during not less than twelve months. This dearth of material is both absolute and relative. The former due to legal restrictions in the disposal of unclaimed bodies, and the latter to the large entry of demobilized men as students. How far removal of legal restrictions would meet the difficulty we are unable to say, but if there is to be a sufficient recruitment of the dental profession the latter cause is likely to remain. Therefore, it would appear necessary for the authorities to consider the matter very carefully, for it is clear that a regulation cannot remain which has to be permanently ignored.

The same conditions have arisen in Ontario. There is a reduction of the number of bodies and an increase in the number of students. Up to the present there has been no hardship but the future is not too bright.

SIR WILLIAM OSLER ON ORAL HYGIENE

"You have to be missionaries, and you have the one gospel to preach; some of us have a great many gospels to preach, but you have just one single gospel to preach, and you have got to preach it early, and you have got to preach it late, in season and out of season. It is the gospel of the cleanliness of the mouth, cleanliness of the teeth, cleanliness of the throat. . . . . . There is not any single thing more important to the public in the whole range of hygiene than that. . . . . . It is a very serious problem, and it is not a slight thing. It is a matter really of national importance. I think if it were a question between alcohol and the teeth as a national problem, I should say the teeth; that is to say, I think the question of getting the teeth into a good condition, in order to improve the nutrition of the children and improve their health, is just as important as any of our great national problems concerning the health of the nation."

The above extract from Sir William Osler's speech at the Royal Dental Hospital in 1905 has a pathetic interest just now. Medicine is immeasurably the poorer by the death of

Sir William Osler. He was a great physician and a great humanist. Like Terence, nothing that was human was foreign to his interest. As his speech showed, he was keenly alive to the importance of oral hygiene. When such a man of unparalleled influence in his profession and in circles outside of it preaches the gospel of the clean mouth, he becomes a powerful advocate of our cause. By his death dentistry has lost a good friend.

Editorial Notes

Death has recently called Drs. Hally B. Smith, Henry W. Morgan, Wellington Belcher.

⁂

The school board of Kitchener, Ont., will establish a system of school dental inspection and treatment.

⁂

Inspector Broderick, Victoria county, Ontario, said that dental inspection in Victoria would hereafter be free.

Dr. Hanania, a dentist in New York, was murdered by a maniac while people were sitting in his waiting room.

⁂

Dr. John M. Parsons, Winnipeg, died January 16th, 1920, from an illness brought on by the ''flu'' in the fall of 1918.

⁂

Dr. McFarland, Kitchener, Ont., has retired from practice because of ill health. Dr. R. O. Winn, New Hamburg, succeeds him.

⁂

A dental clinic has been established at Vernon City Club, Peterboro, for returned soldiers who need service. Dr. F. R. Kerr is in charge.

⁂

Dr. Mackay, Inspector of Hospitals and Asylums of Ontario, recommends the establishment of dental clinics at every hospital in the province.

⁂

Dr. Harold K. Box is one of the staff to give instruction in the treatment of predental diseases at Columbia University beginning March 1st, 1920.

⁂

Dr. F. E. Roach, Chicago, has just recently completed a course of instruction in the city of Hamilton on the most recent attachments for bridges.

The dentist who sends his patients to consult with the laboratory man as to the best treatment for their mouths is surely belittling his own knowledge.

⁂

A survey of the dental work required for the children of the London, Ont., Public schools is in progress. Over six hundred have been examined up to last report.

⁂

Dr. W. A. Blackwell, a Canadian practicing dentistry at Carthage, Ill., died on December 10th, leaving a widow and two children. He was a native of Mitchell, Ontario.

⁂

It is reported in the daily press that the Private Bills Committee of the Quebec Legislature made such an amendment to the Dental Act as will permit dentists to advertise.

⁂

A Miss Thompson, of Weston, Ontario, is claiming damages from a Toronto dentist for destroying her singing voice by reason of a bur having slipped during a dental operation.

⁂

The public health nurses of Manitoba have passed a resolution expressing the serious need for establishing dental clinics in rural centres and travelling dental vans to reach the rural sections.

⁂

The Academy of Dentistry, meeting in Chicago, which is not known to the dental profession, is advertising itself by saying that gold crowns cause disease and that teeth with diseased pulps should be extracted.

⁂

The January issue of the British Dental Journal contains a pleasing reference to the late J. B. Willmott, Dean of the R.C.D.S. Among other things the reference says: "Many will remember him as a very courteous gentleman who attended one of our association meetings."

⁂

A conference of representatives of the dental colleges of Canada was held in Toronto following the Institute of Dental Teachers meeting in Detroit. There is an endeavor to have a common set of regulations for admission, promotion and graduation so candidates may be transferred with proper credits and standing.

The January issue of the Dental Cosmos is issued as a souvenir number and contains several interesting articles by the most noted men of the profession. Among these is noted an article on Operative Dentistry by Edwin T. Darby, and one by Truman W. Brophy on Oral Surgery. The latter makes reference to the work of F. E. Risdon now in charge of the jaw and face cases at the Dominion Orthopaedic Hospital, Toronto.

*

On the front page of the Toronto "Globe" appeared a rather wild statement that a soldier had been given nitrous oxide gas in the dental clinic, London, Ontario, and shortly afterwards rambled into a C.P.R. house where he had done much damage. It was claimed in the article that the patient had been made insane by the gas, or that he had gotten away from the clinic before recovering. The facts are, the man in question had visited the dental clinic several days before the rampage and had a tooth extracted under local anaesthetics. His mental condition had not been considered sound for days, but when he attacked the occupants of a house, being naked at the time and said that nitrous oxide gas made him foolish, there was sufficient evidence to have him placed in an insane asylum.

*

There is considerable complaint against the Canadian Government by users of gold and other precious metals that they allow such metals to be sold retail at the advanced price of exchange between Canada and the United States. The Government does not feel justified in setting a price on Canadian precious metal products when sold in Canada, or in other words, putting an embargo on metals leaving Canada until the home market is supplied. The fact is Canadians can sell their product in New York and receive American currency for it and bring the currency to Canada and sell it at a premium. The only possible means of correction is to put an embargo on Canadian metal products until the home market is served at a set price, as is now done with paper and was done with wheat. If the world market is to be open to Canadian producers, then there is no remedy.

Brantford, Ont., Dec. 8, 1919.

To Dr. A. E. Webster,
Dean R.C.D.S., Ont.

Dear Doctor:

There are a great many cases of green-stain prevailing upon the teeth of the school children of Brantford. Have much stain to clean off, which takes considerable time. Why is that disease so prevalent in Brantford? Could you offer any comment on that point? Of course, it is microbic, and requires *light, heat* and *moisture* to develop it. I presume it is more or less prevalent in most cities upon the teeth of the children. However, the children of the schools of Brantford seem to have a preponderance. What reason could you advance for this phenomenon? Next September, at least, will bring ten schools under my care. The Separate Schools, of which there are two, with one annex, seating ninety-eight pupils, and with room to arrange for another hundred by fitting up two more rooms upstairs in the building. They have instituted inspection in these schools last week also, and by next year will be under operation in the fall.

If you can assign any legitimate reason or cause for the prevalence of green-stain on the pupils' teeth, I would like to hear what it is. It appears on the front teeth, and is more prevalent upon the uppers than upon lowers owing to the greater amount of light being admitted to those localities in the oral cavity. The same condition prevails upon *boots and shoes* laid to one side for a time—a kind of green mould-like substance.

I have been trying to formulate some kind of excuse for the greater prevalence in Brantford schools. We hadn't that state of things prevailing in Toronto when I was there with Dr. Adams in his dental hospital. Green-stain is comparatively easy to remove with a paste made of arom. sulph. ac. (diluted to suit case, or pure if the case be a bad one), and finely ground pumice stone. This applied to the teeth afflicted with a nice soft cedar or Georgian pine stick made like an oar and feathered at the blade-end by rubbing upon a brick for giving a brush-like peripheral business end. Working from the gum line *down,* or *up,* as the case may present, will then remove the green-stain with minimum injury to the gums. Arom.-ac.-pumice stone paste or putty-like mixture is ideal for removal of *green-stain.* But what I wish to learn is why this condition of things prevails to such an extent in Brantford?

W. NELSON CUTHBERT.

DENTAL BOARD, MANITOBA

President, G. F. Bush.
Vice-President, G. H. Greenfield.
Secretary, C. P. Banning.
Registrar, H. F. Christie.
Executive, Captain D. P. Stratton, Major H. A. Croll.

Review

Fractures and Dislocations of the Jaws. By Chalmers J. Lyons, D.D.Sc., Professor of Dental Surgery, University of Michigan, etc. Publishers: Ransom & Randolph, Toledo, Ohio.

This little book is what its title says, "A practical treatise" on the subject of fractures and dislocations of the jaws. The order of the subjects of the text is the opposite of the order of the title. No doubt the author has a reason for the arrangement in each case. There are one hundred and fourteen illustrations of the text, not striking pictures having little value in the elucidation of the subject, but real illustrations. We are glad the book does not run to war surgery, but contains much of value in both civil and war practice. The author has done well to confine the subject to one hundred pages. This is the day of the small book covering one subject. Many an oral surgeon with less experience and knowledge than Dr. Lyons has been tempted to write a whole book with less data.

FOR SALE—Good dental practice in live city in Manitoba. Large rooms, good light, cheap rent. In best location in the city. Reason for selling enquire of the Temple-Pattison Co., Toronto or Winnipeg.

FOR SALE—Good live dental practice in one of the best towns in Saskatchewan, on main line of C.P.R. Good opening. No opposition. Best reasons for selling. Inquire at Temple-Pattison Co., Toronto or Winnipeg.

WANTED—Experienced operator. Salary, $50 to $70 weekly. Box 113, Dental Journal, Toronto.

Dominion Dental Journal

Vol. XXXII. TORONTO, MARCH 15, 1920. No. 3.

Original Communications

DIAGNOSIS BEFORE TREATMENT

It is gratifying to see a gradual tendency of the dental profession to recognize the value of a diagnosis. Dental literature is almost wholly made up of discussions of treatment, there is little written on symptoms and diagnosis. Because of the prominence given to methods of treatment, little study is made of methods of diagnosis. The result is most elaborate treatments are undertaken upon a wrong or more likely no diagnosis at all. Dentists are too often looking for places to apply their treatment, or to put it more plainly, they are looking for places to put fillings, crowns, bridges and dentures. If the patient does not need one of these then he does not need a dentist.

Because of the lack of an accurate knowledge of the anatomy of the jaws and teeth and the physiology of the parts as well as the underlying pathology principles of disease, the profession is stampeded from one extreme to another. It is not long since dentists, who were otherwise reasonable persons, advocated the destruction of the pulp of every tooth which acted as an abutment of a bridge or was to receive a large filling, or recommended fixed bridges for all lost teeth. To-day there are traducers of the profession advising no fixed bridges, no crown or inlay attachments, no vulcanite, just bird cages or coal grates held in position with clasps only. The thoughtless and ill-informed are riding on the band wagon with a streamer hung out, "No pulpless teeth should be left in the mouth." A nation of vital teeth crockery and hardware will be the result.

It is refreshing to see an article in the December "Cosmos" by Arthur B. Crane on the subject "A Practicable Root Canal Technique," in which the author has set forth in black type as the second section diagnosis. It is an acknowledgement that before root treatment is begun there should be a diagnosis of the disease condition to be treated. The methods of determining the vitality or non-vitality of a pulp are clearly set forth, and if the pulp has been found to be dead an X-ray is made to help in determining the state of the peredontal membrane which is at the basis of all treatment for pulpless teeth. Although the author neglects to mention the value of a thorough family, personal and dental history, and gives far too much prominence to the electric test for pulp vitality and not enough to temperature changes, we print below a valuable extract from his paper.

DIAGNOSIS.

The foundation principle of a practicable root-canal technique is accurate diagnosis. Diagnosis is a scientific determination or discrimination of diseases by their symptoms. It calls for a knowledge of cause and effect acquired only by a wide clinical observation. It is the embodiment of experience. Without a correct perception of conditions to be met any treatment becomes empirical.

In the management of root-canals, a careful diagnosis based upon methodical examination should precede any effort at treatment. Thereby much time and useless effort may be saved, and respect for the prognosis of the dentist increased.

The diagnostic procedure should begin with a thorough physical examination. If this is properly conducted, it will not only indicate suspicious teeth, but in many instances will classify those which may be expected to respond favorably to therapeutics, those whose only hope lies in surgery, and those which must be condemned to extraction.

The following conditions, if found, indicate the advisability of further investigation:

Color.—A tooth whose shade is not in harmony with its fellows is probably the seat of a pulp leaion.

Translucence.—This is commonly called the live-tooth appearance. When it is absent the pulp is probably dead. A small mouth held lingually will be of great assistance in determining this point.

Large Cavities.—These should be carefully excavated and tested with a sharp explorer to determine proximity to the pulp chamber.

Large Fillings.—These are always suspicious and should never be passed without thorough test.

Gold Crowns.—Teeth under gold crowns are also always suspicious. The wonder is not that so many pulps die in such teeth, but that any survive. The reason for this is that the freshly denuded dentine is left exposed to the fluids of the mouth until the crown or inlay is set. Infection invades the dentine tubuli, and is sealed in to continue its activity until at last the pulp becomes infected. As a precautionary measure a mild antiseptic should be sealed in contact with exposed dentine before the patient is dismissed. Cement should be used in cavities and aluminum shells for crowns. A cement of eugenol and oxid of zinc is excellent for this purpose.

Post Crowns.—With rare exceptions these are placed on pulpless teeth.

Crownless Teeth.—These sometimes contain vital pulps, but unless treated prior to restoration will surely cause after-trouble.

TESTING THE TEETH BY MEANS OF THE ELECTRIC CURRENT.

Having marked all teeth which are suspicious by the foregoing tests they should further be checked by means of the electric current. Either the Faradic or galvanic current may be used, the only requirement being some method of controlling the dosage. The high-frequency current is also useful in this connection, but it is more difficult to concentrate this current upon given areas of the tooth crown, and thus a faulty diagnosis may result. With any of the standard galvanic switchboards. such as are used for electrolytic medication, the test is made as follows:

A section of a broken broach is fitted into the needle-holder and attached to the positive wire. The sponge electrode is soaked with salt water and held by the patient in the palm of the hand. The pip of the broach is wrapped with cotton fibres, and this also is moistened with salt water. Several teeth which are unquestionably vital are now tested and the tolerant dosage noted. With this as a control the suspicious teeth are tested. Machat warns against touching the electrode to metal fillings or crowns, but as the resistance of sound enamel varies so much in individual teeth, it is generally satisfactory to apply the electrode to a filling or crown where the metal does not come into contact with the soft tissues, especially where corresponding fillings or crowns of known vitality can be as controls.

It should be borne in mind that more current is required to penetrate enamel than metallic fillings, also that crowns and inlays have an intermediary of more or less non-conductive cement, which causes these teeth to respond only to an increased dosage.

Recession of the pulp or thick deposits of secondary dentine in the pulp chamber must also be taken into consideration. When the canal is filled with the liquid products of decomposition, the tooth is often quite as sensitive to electricity as if the pulp were vital, and where hyperemia of the pulp exists, the tooth will often be more sensitive than the control. For teeth in which the electro-diagnostic test is inconclusive the old-fashioned thermal tests will often be of assistance in clearing the diagnosis.

Having by the foregoing tests excluded the teeth of unquestionable vitality, the next step is a clinical examination of the periepal region. Careful search should be made for fistulae or scars where these have healed. The discovery of such will suggest more or less destruction of periapal tissue, but there will often be as much or more disorganization where this evidence does not exist.

PERCUSSION.

The degree to which the apical attachments of the tooth have been destroyed may be judged by percussion. The so-called "dull note" of the older practitioners requires a trained ear, but has a definite value. The percussion of that of Talbot is of more universal value. This is accomplished by placing a finger of the left hand over the apex of the suspected root and striking the cusps of the tooth with a heavy instrument at different angles. If the bone has undergone destruction the vibrations will be transmitted through the root to the finger. This test is of greater value on anterior teeth than on molars; where pyorrhea exists it is utterly confusing.

To ascertain the extent to which the bony plate of the alveolar process has been destroyed, take a small hard pledget of cotton in the cotton pliers, and press hard on the mucous membrane overlying the root apex. The tissues will sink into such an opening, and slowly return when pressure is removed. The appearance is much the same as pitting of the skin by pressure in edema.

Whenever the clinical tests classify any tooth as suspicious, the patient should be carefully questioned as to its history. Some patients have extremely good memories, and almost all can remember a prolonged toothache or the swelling of the face in the region of the tooth in question.

THE X-RAY AS AN AID IN DIAGNOSIS.

With the data now in hand all teeth recorded as non-vital or suspicious should be radiographed to complete the diagnosis. Correct interpretation of dental radiographs cannot be made in the absence of good clinical data, and this point cannot be made too strong. Neither can radiographs be properly read by one deficient in the knowledge of normal dental anatomy. The density of the film, the angle from which the exposure has been made, the density of superimposed structures, and the contiguity of other anatomical formations must all be taken into consideration.

In reading a dental X-ray film, the teeth known to be normal should first be studied. The use of a good reading-glass, or dentiscope, will be of great help. It will be noted in the case of a normal tooth that the pericementum can be traced around the root as a continuous radiolucent line. Adjacent to and surrounding this will be seen the lamina dura or radiopaque line. It will also be noted that the trabeculae of bone about the apex are homogeneous with the bone which lies ajoining.

Infection is microscopical, and cannot be radiographed. What we look for in the film is not infection, but the results of infection. Thus it may happen that a tooth recently infected or one long habitat of organism of low circulence may present a radiographic record in no way differing from the normal. Again, in the entire absence the cuspid is normal. Note the continuous line of the pericementum and the lamina dura. Also the homogeneity of the surrounding trabeculae of bone. Compare with apical regions of latera and first bicuspid. Of infection there may be a rarefying process in the adjacent bone sufficient to cause a most decided radiolucent area. This latter picture is caused by over-stimulation, as in traumatic occlusion, or orthodontic procedure, and may also be observed about the forming roots of adolescence. Bearing these points in mind, the suspicious tooth should be examined to see in what manner it differs from the normal. The first thing to look for is a thickening or break in the line of the pericementum at the apex of the root. Next the bone about the apex should be examined for radioparency or radiolucency, and the presence or absence of the lamina dura noted; then the periphery of the apex should be studied for evidence of roughness. When any or all of these signs are recorded in the radiograph of a tooth which the clinical examination conclude that the tooth is infected and that we are dealing with periapical disease. Where all of these signs are absent and the pulp is known to be contaminated or dead, the infection, if present, while confined to the root-canal and dentine, is still a constant menace to the periapical tissues.

PHOSPHINE AND ITS RELATION TO DISEASE

Graham Chambers, M.D., Toronto.

The occurrence of influenza, encephalitis lethargica, and other affections of an ill-defined nature at the present time, suggested to me that I should write concerning some work on chronic poisoning with phosphine which I have been carrying on during the last three years.

This study has led me to believe that the ingestion of phosphine, even in minute doses for long periods, is capable of producing a great variety of diseases in the most insidious manner. I believe that poisoning with phosphine has been common during the late war, and was the principal agent in engendering diseases occurring during, but not prior to, the war, such as shell shock, trench foot, trench shin, trench fever, trench mouth, trench nephritis, and encephalitis lethargica; and I am also of the opinion that poisoning with phosphine has been the principal cause of the variations of some diseases of "known" origin observed during the war, such as the increased frequency of acute yellow atrophy of the liver, exostoses, neuromata, and neurasthenia, and mental diseases; the increased severity of syphilis and influenza (influenza itself, is in my opinion swine fever communicated to man whose resistance has been reduced by phosphine).

In carrying on this work I have depended principally on inductive reasoning, making use of my knowledge of the pharmacological action of phosphorus and phosphine, clinical observations, and observations of laboratory workers. Any induction formulated to explain facts has been tested in a deductive manner so far as opportunity presented. I may tell you that I have been greatly handicapped by the want of laboratory facilities.

Most of my work was carried on while I was in the army in England. After my return from overseas in August last, I found evidence of poisoning with phosphine, or phosphorus, in the civilians of Toronto. I then began to test food, water, and drugs for phosphine. I found it in the city water of Toronto, one kind of pear, and two samples of Epsom salts. I then began testing faeces for the poison, and found it in several cases presenting the following symptomatology:

1—Symptoms of increased sensitization of the nervous system.

2—Constipation with abdominal distress and offensive stools after a purgative, and symptoms of hepatic insufficiency.
3—Purpura mostly seen in women.
4—Symptoms of fibrositis (myalgia, etc.).
5—Symptoms of irritation of the genito-urinary organs.

In my experience cases of this type are common at present, and I have no hesitation in diagnosing phosphine poisoning when the symptomatology is fairly complete without testing the stools for phosphine. Moreover, treatment rational to my belief as to the origin of the condition is successful.

The action of phosphine is somewhat similar to the action of the toxins of the spirochaete pallida. Indeed, some of the affections, engendered by phosphine may be mistaken by one unfamiliar with its action for luetic infections, especially general paralysis and tabes dorsalis. For instance, in the early stages of both general paralysis and poisoning with phosphine, symptoms of neurasthenia are present. Later in both one gets inequality of the pupils, tremor, asthenia, etc. Dr. Hunt of New York City, in the "J.A.M.A.," January, 1918, described cases of this kind occurring in the American army. He was unable to account for them as they were negative to the Wassermann reaction. There are many other resemblances between the two conditions; in both there is a diminished resistance to infectious diseases; in both periostitis, neuritis, and stomatitis are common. The affection known as encephaltis lethargica, which is occurring at the present, resembles in its symptomatology the acute attacks in general paresis. Indeed, in most cases one has to do a Wassermann test to distinguish the affections. Now, I hold the view advanced by Louis Bruce and Idelsohn some years ago that tabes dorsalis and general paresis are syphilitic disorders, complicated by secondary infection from the gut, the germ being probably the bacillus coli. If this view is accepted, then the origin of encephalitis lethargica can be explained in an analogous way. The ingestion of phosphine, or the over-production of phosphine in the gut, will tend to lower the resistance of the liver and of the tissues generally, and to increase the sensitization of the nervous system, etc. These changes produce increased susceptibility to infections, especially from the gut. In a condition such as this one can can readily understand how infection takes place from the gut, by a germ of the normal flora, or one ingested with food, such as the micro-organisms of swine fever, and chicken cholera. In the case of encephalitis lethargica I suspect the micro-organism of chicken cholera.

The question naturally arises: "Why are minute doses of phosphine administered for long periods so dangerous? The answer to this is, I believe, that infinitesimal quantities of phosphine may occur normally in metabolism. Fischer, writing before the war, stated that it is possible that phosphine is formed in putrefaction. You know that we have evidence that bacterial growth in the gut of both adults and infants is necessary for health. In an infant the action of the colon bacilli and putrefactive germs is very slight, if present, because in health the bile is not reduced to any extent as indicated by the yellow color of the stools and the absence of stercobilin. If the stools of an infant become brown and contain stercobilin the infant is, in my opinion, always more or less ill, although it may not show any marked gastro-intestinal disturbance. The explanation of this is, I think, that phosphine is liberated so readily from caseinogen that, when the putrefactive changes that occur in an adult take place in an infant, the latter suffers from poisoning from phosphine. I believe that the origin of rickets, tetany, laryngismus, eclampsia, and other affections in which there is a sensitization of the nervous system, is to be at least partly explained in this way. The view held at present that in the sensitization of the nervous system there is a deficiency of calcium salts is, I think, probably correct, but I hold that it is usually secondary to the action of the phosphine.

The above hypothesis would explain the principle of the mode of action of phosphine. Infinitesimal quantities are necessary in metabolism; deficiency or excess tends to cause disease. My observations go to show that phosphine may be formed from tissues of the body or from food, and the foods which give rise to it most freely are the phospho-proteins (caseinogen, vitellin, phospho-protein of eggs of fish, and possibly of the "germ" cells of cereals).

I ask the question: Is phosphine a growth-producing substance of the character which has been designated vitamines during recent years? I may tell you that I am skeptical about some of the literature on vitamines.

In connection with this discussion, another interesting study is the relation of poisoning with phosphine to the disturbances of menstruation and pregnancy. I have been struck by the remarkable resemblances between diseases engendered by phosphine and the physiological conditions, and diseases of pregnancy. In both we get a sensitization of the nervous system with a tendency to neurasthenia, hysteria, neuralgia, convulsions; nervous disturbances of the stomach and heart, etc.; in both there is a tendency to acute yellow atrophy and nephritis; in both an increased susceptibility to infections; in both a tendency to constipation ; in both a tendency to dermatitis perpetiformis. Again, during menstruation there is a sensitization of the nervous system.

An hypothesis which will explain these facts is that the endometrium supplies a sensitizing agent which readily liberates phosphine. The hypothesis would also explain the character of the lochia, such as offensive odor, and the presence of gas in cases of puerperal fever due to infection with the colon bacillus.

The foregoing is a brief statement of my work in connection with phosphine. If you are interested, I shall be pleased to supplement these statements with a more detailed discussion. In this connection I have attempted to condense the subject within the limits of a letter.

P.S.—In your profession you are, of course, specially interested in the part of my work bearing on aetiology and treatment of dental affections, particularly pyorrhœa alveolaris and dental caries. My contention is that these particular affections are usually secondary to sensitization of the nervous system and diminished resistance of the peridental membrane and perisoteum of the alveolar processes. In my letter I have briefly outlined how these conditions are brought about. I am aware that some specialists in pyorrhœa maintain that the primary change in the affection is a deposition of tartar, but I am not sure whether they believe that the deposit is of local or systemic origin. I hold the latter view, though extreme local care of the teeth will prevent it to a great extent, as it will also pyorrhœa and caries. Indeed, I make use of the presence of tartar or pyorrhœa as a sign of the systemic disturbance referred to above.

In support of my contention I may recall to you the mode of action of phosphorus in the production of necrosis of the jaw in chronic poisoning with this toxic agent. It is established, I think, that the necrosis is due to local infection, the phosphorus only predisposing the part to the necrotic condition. Now, we know that phosphorus has an elective action for nervous tissue and for fibrous tissue, and prolonged administration of it lowers the nutrition of these tissues.

STONE CUTTERS AND CATHEDRAL BUILDERS

An Address to the Students of the Faculty of Dentistry, McGill University, Montreal.

Joseph Nolin, D.D.S., Montreal.

Dr. Crane, an American sociologist, tells about a man who saw three stonecutters at work. Approaching one of them, he asked: "What are you doing?" "I am cutting stone," answered the working-man. "I cut stone in the morning, and I cut stone in the afternoon; I cut stone all day. It is my trade." From the second stonecutter to whom he put the same question, he received a different answer: "I am trying to earn my six dollars a day" was all he said. Turning towards the third, who had kept busy at his work, polishing carefully, lovingly (one might have said, almost religiously), a block of granite, he asked him: "And you, my friend, what are you doing?" The third stonecutter straightened his mighty shoulders, looked the man straight in the face, with eyes in which there lurked the vision of things afar off, and, pointing his finger at the rising walls of a church, on the adjoining plot, he answered: "I am helping to build a cathedral." In all fields of human endeavor there are stonecutters. Stonecutters who cut stone because it is their trade. Men who work in the morning, and who work in the afternoon, without pleasure and without enthusiasm; with no greater ambition and no further desire than to hear the factory whistles announce the end of the day.

And then, again, there are the mere money-worshippers for whom the amount of their wages, their salary or their honorarium is the beginning and the end of all things. Professional standing for such men; scientific attainment for such men; common equity and honesty of purpose for such men; love of God and pride of country for such men; reverence of the past, faith in the present, and hope for the future; all these intangible, unseen, unexplainable things, which combine, in a human soul, to form that which we are agreed to call an *ideal,* and without which human life would not be worth the living or human society worth living into; are, for such men, but worthless things, useless luxuries, good, at best, to be, now and then, offered in sacrifice to their only god—the almighty dollar.

In all spheres of society such individuals are to be found. Like pathogenic germs, they are omnipresent and undestroyable. Unheard, unseen, like cooties, their presence is felt all over.

If the dental profession of this province has had, in the past, and has to-day, its full share—aye, more than its full share—of stonecutters and money-worshippers, it has also, thank God, its fair quota of cathedral builders—men for whom work is a pleasure and sacrifice a privilege; men who understand that every man is but a unit in the scheme of things. That he has received virtues and knowledge and faculties, not only for his personal gratification and enjoyment, but so that he may cultivate them, and improve them, and transmit them to others, to be further improved and cultivated. Men who are sometimes mocked and sneered at by stonecutters and money-worshippers, and called by them dreamers of dreams, rainbow chasers, idle idealists and sterile theorists—all this because they refuse to pray at the altar of the Golden Calf, and recognize no rule, above the golden rule.

Such men as these, gentlemen, it is your good fortune to meet every day.

Go to any large city in America, meet any leading dentist, having anything to do with dental education, tell him you come from Montreal, and his first question will be: "Do you know Dr. A. W. Thornton?" If your distinguished dean were not present, I might tell you what else this leading dentist would say. Such things, for instance, as that he is a speaker among speakers, a teacher among teachers, a friend among friends, a cathedral builder. Knowing, however, that he is, before all, a modest man amongst modest men, I would not dare repeat such things in his presence. Nor would I dare tell you all that could be said of your other teachers, for fear also of wounding their modesty. Suffice it for me to say, undergraduates of McGill, that, under the guidance of such teachers, and with the inspiration of such leadership as you get from your Dean, you must, one and all, enter the dental profession, in the near future, resolved to become not only true professional men, but real idealists, and true builders of cathedrals.

DENTISTRY IN GREAT BRITAIN AS FOUND BY A COMMITTEE OF THE HOUSE OF COMMONS

(Continued from February Issue)

The following particulars supplied by the Association indicate the acute shortage of registered dentists in many districts and the very uneven distribution of registered dentists in other districts:

Banff, Elgin and Nairn Counties: In many districts only unqualified practitioners.

Birmingham: Large suburban areas are without qualified men.

Bolton, C.B. (pop. 168,000): 13 qualified to 80 unqualified men.

Colchester District (pop. 100,000): 4 qualified men.

Dartford U. D. (pop. 19,000): 4 qualified men, including 2 visiting.

E. Ham C. B. (pop. 133,000): No qualified men.

Glasgow South: Unqualified men in a great majority.

Halifax Division (pop. about 199,000): 10 qualified and about 25 unqualified men.

Huddersfield Division (pop. about 193,000): 7 qualified and over 100 unqualified men.

Ilford U. D. (pop. 78,000): No qualified men.

Northampton C. B. (pop. 87,000): 5 qualified and over 20 unqualified men.

N. Glam. Division (pop. 405,000): Only 5 qualified and 2 registered.

Rhondda U. D. with pop. of 114,000 (or, according to Hon. Secretary, 180,000): Has no qualified man.

Nuneaton U. D. (pop. 25,000): Two or three times as many qualified men could find work if there were no unqualified men.

Renfrew M. B. (pop. 10,000): 1 qualified man adequate while unqualified men allowed to practise.

Rochdale C. B. (pop. 83,000): 3 qualified and at least 20 unqualified men.

Romford U. D. (pop. 17,000): No qualified men.

Ryton U. D. (pop. 9,000): No resident qualified practitioner; 2 unqualified men.

S. Staffs. Division (pop. about 291,000): Only 5 registered dentists.

Stratford Division (pop. 574,000): 7 qualified men.

Trowbridge Division (pop. about 106,000): Only 4 qualified dentists, including school dentist. About 30 unqualified men, all of whom have large practices.

West Ham C.B. (pop. 289,000): 2 qualified dentists.

89. We have given the most careful consideration to all the evidence put before us bearing on the question of "shortage" of registered practitioners, and submit the following conclusions:

(1) There was a great shortage of registered dentists before the war, which shortage has become intensified at the present time.

(2) Registered practitioners are very unevenly distributed in the different countries of the United Kingdom, and also in the different parts of each country.

(3) The registered practitioner mainly attends to the dental needs of the upper and middle classes, the artisan and working classes in the bulk receiving, in proportion to their numbers, very little treatment from the registered dentist.

(4) The dental needs of the population do not determine where the registered dentist practises.

(5) The registered dentist tends to gravitate to the centres of populous towns and to smaller towns where high fees are obtainable or a lucrative practice probable.

Stated briefly, owing to the shortage of dentists registered dentists practise in localities which are determined more by the social status of the inhabitants and the fees which it is possible to earn than by the need of the people for dental treatment.

SECTION VII.—CAUSES OF THE SHORTAGE IN NUMBERS OF REGISTERED DENTISTS AND SUGGESTED REMEDIES.

90. We are agreed that there is a great shortage of registered dentists, and we have received a considerable amount of evidence as to the causes which have operated to produce this shortage. The evidence received from registerd dentists is practically unanimous that the main reason why sufficient students do not enter the dental profession is owing to the unsatisfactory state of the law. Parents will not choose a profession for their sons which is liable to confusion with, and competition by, unqualified practitioners who have received neither instruction nor training in dentistry. *It is further represented that the unregistered practitioner is frequently a charlatan attracting business with blatant advertising or un-*

scrupulous touting, who being subject to no control or professional code of ethics, brings discredit on the dental profession. As the public is unable to distinguish the professional dentist from the unregistered practitioner the whole status of the dental profession and its individual members is lowered and debased.

91. We think that the representations that have been made to us are not one whit too strong, and that the registered dentist feels most keenly the unfortunate social position of his profession. We do not think that the registered dentist is unable to make a satisfactory living at his profession, nor has this been suggested to us. On the contrary, owing to the shortage in dentists he is enabled to pick and choose the locality in which to practise. It has been put before the Committee very strongly by the General Medical Council, the British Dental Association, and representatives of other bodies competent to express the views of registered dentists, that the prohibition of dental practice by unregistered practitioners will of itself lead to such an increase in the number of dental students entering the dental schools that in a few years the number of registered dentists will fully meet the dental needs of the public. The length of the dental curriculum, the stringency of the examinations (educational and professional), and the expense of training were usually regarded as affecting only in a minor degree the number of students seeking to enter the dental profession.

92. The unregistered practitioners, while agreeing that the state of the law in permitting unregistered dental practice naturally has led to a less number of practitioners seeking to qualify for registration, have coupled with this other reasons which have contributed to the shortage. Thus the Incorporated Dental Society in a statement to the Committee narrate the following reasons as operating in producing a shortage in registered practitioners:

(1) The heavy expense and the length of time involved in qualifying for the requisite diploma to obtain admission to the Dentists' Register, which deter any but the well-to-do from entering the profession of dentistry through the recognised portals.

(2) That the period of training and the pecuniary outlay is only a little, if any, less than that required to qualify for medicine and surgery, whereas the medical profession offers better pecuniary prospects than the dental profession.

(3) That dentistry, unlike other professions, involves lab-

orious work in the considerable section of mechanics and is thereby less attractive than other professions.

(4) That rightly or wrongly dentistry has been considered by the well-to-do as a profession lower in the social scale than the practice of medicine.

(5) That the registered dentist, being subject to the control of the General Medical Council and to a certain code of ethics and in effect precluded from advertising his practice to any great extent, finds himself at a disadvantage compared with his unregistered opponent.

(6) The ignorance of parents as to the qualifications required for admission to the Dentists' Register and the frequent failure of dentists when taking premium apprentices to explain to parents the time and expense involved in going through the necessary curriculum to obtain admission to the Dentists' Register, the result being that upon the conclusion of the apprenticeship the individual starts as an assistant with a view to perfecting his knowledge and ultimately starting practice for himself as an unregistered practitioner.

(7) The fact that more especially in the provinces, registered dentists frequently employ unregistered assistants to do not merely mechanical work, but operative dentistry, and have entire charge of visiting branches without any supervision. The result is that these men having gained experience in that matter seek to improve their pecuniary and social position by starting in practice for themselves and so the number of unregistered practioners is increased.

(8) A number of persons, including registered dentists, have advertised in various trade journals, pointing out the advantages to be gained by the practice of dentistry either separately or in conjunction with pharmacy and offering "to teach the art of dentistry and fit persons for the practice of dentistry in a week," thereby causing an influx of unregistered practitioners with little or no knowledge or experience. It is such men who are largely responsible for such evils as exist.

(9) Many unregistered practitioners who desire their sons to follow the calling of dentistry would have been quite willing and, indeed, would have preferred that they should become registered dentists. Dental schools or examining bodies, however, refuse to recognize the indentures of an unregistered practitioner—consequently an unregistered practitioner, instead of training his son in mechanical dentistry, would be compelled to send him to a dental hospital for training in mechanical dentistry, which he would in some cases receive, not

from a registered, but an unregistered man. These young men, therefore, have started as unregistered practitioners instead of as registered dentists.

93. The first three reasons would not be removed if the law were altered so as to prohibit the practice of dentistry by unregistered practitioners. The reasons 5-9 would cease to operate if the law was so altered. Before expressing the conclusions which have been reached by the Committee we would wish to refer to evidence which Mr. Sidney Webb gave that bears on this question. He represented to us that as long as the class from which dental students were drawn was limited to those whose parents could afford to spend £1,000 in training a son for a profession, the number of students who could enter such a profession was strictly limited, and it was hopeless to expect that sufficient students would be forthcoming adequately to fill the ranks of a profession largely increased in numbers. He advocated a system of State scholarships on a generous scale to make good the deficiency of dental students, and so ensure a sufficiency of dentists to meet the needs of the public.

94. *We are of opinion that sufficient registered dentists are not likely to be obtained to meet the dental needs of the population in the future unless the present state of the law is altered and the dental profession is protected against competition by unregistered practitioners. Unless effective steps to this end are taken we are of opinion that the number of registered dentists entering the profession is only likely to suffice for the services of the rich and comparatively well-to-do. The working classes will have to rely on the unregistered practitioner, and will continue to be liable to suffer all the evils associated with his class of practice.* While we regard the protection of the dental profession, as stated in this paragraph, as fundamental, we attach importance to the reasons advanced by the Incorporated Dental Society, believing that the unregistered practitioner is likely to have a very clear impression of the reasons which have prevented him personally from becoming a registered dentist, and that possibly his opinion in this respect may be more correct than that of the registered dentist. For this, among other reasons, *we think that the expense and length of time involved in qualifying for a registrable diploma are factors which cannot be disregarded as contributing to the shortage of dentists.*

95. As regards expense to students, this can be lessened by shortening the length of the curriculum, increasing the

State grants available for dental schools so as to secure a diminution of fees charged to students, and by a liberal provision of scholarships. We are in favor of all three methods under certain conditions, which are specified elsewhere in the report. (Paras. 156, 216-20, 225.)

SECTION VIII.—DENTAL TREATMENT ASSISTED BY THE LOCAL GOVERNMENT BOARD

96. The attention of the Committee has been called to two directions in which dental advice and treatment are provided by local authorities with the assistance of State grants administered by the Local Government Board. Sir Arthur Newsholme, K.C.B., the Medical Officer of the Board, has furnished the Committee with a memorandum on the subject.

I. DENTAL TREATMENT IN RELATION TO MATERNITY AND CHILD WELFARE WORK

97. Under the regulations of the Local Government Board as to Maternity and Child Welfare, grants are available for approved expenditure on a dental clinic for expectant and nursing mothers, and for children under 5 years of age. The grant is available for the payment of the dentist and the equipment and maintenance of the clinic. The grant is also available for the provision of new dentures in cases where the medical officer of a maternity centre is satisfied that such provision will materially conduce to the improvement of the health of the expectant or nursing mother and the mother is not able to provide dentures herself.

The grant for dental treatment has only been available for a very short period, but already much progress has been achieved, and Sir Arthur Newsholme in his memorandum mentions 10 metropolitan boroughs and 10 provincial areas in which dental schemes are in operation or in process of being established.

98. The Committee regards the extension to dental treatment of the grants for aiding maternity and child welfare as meeting a great public need. Expectant and nursing mothers should, perhaps more than any other section of the community, have teeth in such a condition that they can properly masticate their food. To this end their teeth ought to receive such dental treatment as is needed, and where necessary deficient dentition should be made good by the provision of artificial dentures. Such treatment is necessary in the interests both of the mother and her child. The institution of dental treatment in association with child welfare centres is particularly

valuable as affording a means of bringing the teeth of young children under observation and, if necessary, obtaining treatment before the child attends school. There is evidence that the advantages accruing from school dental inspection and treatment would be greater if the children came under dental treatment before school age.

99. The advantage of children coming under dental supervision before school age has been forced on the attention of school medical officers and dental officers by the extent of decay which has been found to exist at the first medical inspection of children after entering school. Individual school medical officers have supplied us with figures for the districts for which they act, and figures for grouped areas are included in Sir G. Newman's reports. In 1916 he states that in a survey of 42 areas of all kinds, comprising counties and county boroughs, the routine medical inspection of "entrants" showed 66.7 per cent. having dental defects. Dental defect at entrance to school life is mainly in the temporary teeth, but unfortunately frequently a considerable amount of dental decay has also taken place in such permanent teeth as have erupted. There is a consensus of opinion that the prevention of decay in temporary teeth would save many cases of decay subsequently setting in in the permanent teeth, especially in the first permanent molars. Dr. Hamer, the medical officer of health and school medical officer of the London County Council, in his annual report for 1917 states that the percentage of entrants with "severe caries or oral sepsis" was, during 1917, over 23 per cent. He mentions that arrangements have been made at some of the Council's dental centres for treatment to be available in connection with infant welfare centres, for expectant and nursing mothers.

The Committee are of opinion that dental treatment of expectant and nursing mothers and of children under five years of age in connection with maternity and child welfare schemes should be energetically pressed forward as a branch of practical preventive medicine. The Committee indeed look forward to maternity and child welfare centres being regarded in the course of a few years as fully efficient and eligible for full government grants only if dental treatment is provided.

II. Dental Treatment for Tuberculosis

100. The Local Government Board hold that county and county borough councils may properly provide for persons suffering from tuberculosis such dental treatment as is necessary to assist the patients' recovery from the disease. This

treatment comprises conservative treatment and the extraction of teeth. The government grant of 50 per cent. of the net expenditure of councils on the treatment of tuberculous persons, insured and non-insured, is available in aid of expenditure incurred by a council with the approval of the Board on the dental treatment of such persons, and also on the provision of artificial dentures when these are a material aid to thee patient's recovery and he cannot afford to pay for them himself. Sir Arthur Newsholme's memorandum gives 34 instances in which councils have made arrangements, or propose to make arrangements, for providing dental treatment for persons suffering from tuberculosis.

101. *Expenditure on dental treatment for tuberculous patients is often imperative in the interests of the patient, but the Committee observe that this is expenditure which when adequate dental treatment of children and young adults is provided, should in the course of time very greatly diminish. It furnishes an excellent example of how the neglect of the State to provide a preventive dental service for its young citizens leads later on to the State needing to intervene to give its adult citizens an improved prospect of recovery from a fatal disease.* Tuberculosis is a disease, moreover, which many competent authorities regard as favored by the conditions resulting from neglect of dental disease.

Section IX. School Dental Inspection and Treatment

Pioneer Work

102. The importance of the inspection and treatment of the teeth of school children was first seriously brought before the dental profession and the public both at home and abroad by a series of papers and reports which were presented at the annual meetings of the British Dental Association by Mr. W. MacPherson Fisher, of Dundee, from 1885 to 1889. In his first paper, in 1885, Mr. Fisher expressed the opinion "That every child's mouth ought to be examined and treated on its entrance into school life . . . and at least once a year, or oftener by a qualified dentist." The British Dental Association, on March 1st, 1890, appointed a committee "to continue and to conduct the collective investigation as to the teeth of school children, and to finally report thereon to the Representative Board." The committee issued a series of seven annual reports from 1891 to 1897.

103. About the same time the first public appointments of school dentists were made by the boards of guardians to in-

spect and treat the teeth of children in poor-law schools. The Local Government Board, in 1897, issued a series of recommendations to boards of guardians in regard to the appointment of dental officers as follows:

1. The officer appointed should be required:

To attend at the school or other appointed place according to his agreement with the guardians or managers.

To inspect the teeth of all children admitted since his last visit.

From time to time, according to his agreement, to inspect the teeth of all children in the school or workhouse, as the case may be.

To attend duly and punctually at each visit upon each child requiring dental treatment, and upon any child who may be brought to him for treatment in the intervals of such visits.

To keep a record of his work, and to report the same to the guardians or managers, in a book to be provided by them for the purpose, under the following heads:

Date.
Number of children inspected.
" temporary teeth extracted.
" permanent teeth extracted.
" teeth filled.
" scalings.
" other operations performed.

Any matters which the dental officer may deem necessary or desirable to bring to the notice of the guardians.

This book should ordinarily be kept at the school or workhouse, and should be laid before the guardians or managers by the clerk at each meeting, and should be produced to the inspectors of the Local Government Board when required.

2. It was required that the dental officer should be duly registered in accordance with the Statutes in that behalf (41 & 42 Vict., c. 33, 1878, and 49 & 50 Vict., c. 48, 1886), or if not so registered, by reason of any medical or surgical qualification exempting him from the obligation of registration as a dentist, the officer appointed shall produce satisfactory evidence that he held a license in dental surgery from the Royal College of Surgeons of England, Edinburgh, or Ireland, or from The Faculty of Physicians and Surgeons of Glasgow, or other approved authority.

3. The guardians or managers were allowed to pay a dental officer either by an inclusive salary, or partly by salary, and partly by fees on a fixed scale for specified operations,

provided that all payments for extractions shall be included in the salary assigned to the officer and shall not be made by fee.

4. If the dental officer attends at the school or workhouse, it would be necessary that the guardians or managers should provide for his use a suitably equipped surgery, including a dental chair and a dental engine, and such other apparatus as may be necessary. It is desirable that they should also provide the necessary materials for fillings, and such special appliances as may be needed for mechanical treatment.

104. It will be noticed that these recommendations provided for:

(1) The appointment of registered dentists or licentiates in dental surgery.

(2) The inspection of newly admitted children.

(3) The periodical inspection of all children.

(4) The dental treatment of children requiring it at the periodical inspections.

(5) The treatment of special cases brought to the dentist between periodical inspections.

(6) The keeping and inspection of records of work done.

(7) Provision of suitable equipment and materials.

(8) Payment either wholly by salary or partly by salary and partly by fees for specified operations.

(9) Payment for all extractions was to be included in the salary and not be the subject of special fees.

These recommendations were designed to secure a complete periodical inspection and conservative treatment of the teeth of children in poor-law schools under the control of boards of guardians. A number of dentists have been appointed, and dental clinics established in London and the provinces.

105. A number of dental appointments have also been made with the sanction of the Secretary of State and the Secretary for Scotland in connection with reformatory and industrial schools.

106. The appointment of school dentists led to the formation, in 1898, of the School Dentists' Society, composed of dentists appointed to any public institution for children. The first president was Mr. Sidney Spokes, who gave evidence before the Committee in another capacity. The present president, Mr. R. Denison Pedley, F.R.C.S., Edin., L.D.S., gave evidence before us on behalf of the society.

107. The dental inspection of school children became merged, in the first decade of the present century, into the major question of medical inspection of school children, of

which it naturally forms a part. In 1903 appeared the report of the Royal Commission on Physical Training (Scotland), in 1904 the report of the Inter-Departmental Committee on Physical Deterioration, in 1905 the Report of the Inter-Departmental Committee on Medical Inspections and Feeding of Children attending Public Elementary Schools.

108. These several reports directed public attention to the importance of school medical inspection and treatment. In 1907 was passed the Education (Administrative Provisions) Act, 1907. Section 13 I (*b*) imposed a duty upon each local education authority "to provide for the medical inspection of children immediately before, or at the time of, or as soon as possible after their admission to a public elementary school, and on such other occasion as the Board of Education direct, and the power to make such arrangements as may be sanctioned by the Board of Education for attending to the health and physical condition of the children educated in public elementary schools." It will be noticed that whereas the medical (including dental) inspection of elementary school children was imposed as a duty, the medical treatment of any diseased conditions of children (including diseased teeth) which the medical inspection revealed was not made a duty, but an enabling power which local education authorities might exercise under certain conditions.

109. The passing of the Education (Administrative Provisions) Act, 1907, marked the introduction of a new era in the medical examination and treatment of the school child. Under the duties and powers imposed and conferred, the dental examination and treatment of school children has been gradually developed as a branch of the school medical service.

The Dental Inspection and Treatment of the Elementary School Child

110. The gradual development of school dental inspection and treatment is recorded in the annual reports of the Chief Medical Officer of the Board of Education, who has invariably included a separate section dealing with dental inspection and treatment.

In the first memorandum issued on Section 13 of the Act,* the Board of Education laid it down that as far as practicable the statutory medical inspection should, at entrance or at subsequent inspection, take account of the teeth and of oral sepsis.

---

* Circular 576. Memorandum on Medical Inspection of Children in Public Elementary Schools under Section 13 of the Education (Administrative Provisions), Act, 1907 (22 November, 1907).

In a circular (No. 582) issued in January, 1908, on the subject of a schedule for medical inspection, the Board of Education expressed the view that the minimum of efficient medical inspection to be made and scheduled should include, so far as the teeth were concerned, a statement as to the general condition and cleanliness of temporary and permanent teeth and amount of decay. Exceptional features such as Hutchinsonian teeth were to be noted, as also was oral sepsis.

111. A mass of comparative data has been received in the Medical Department of the Board of Education as to the state of teeth of different age-groups of school children in the several parts of England and Wales, and tables giving summarized information on these points are included in the annual reports of the Chief Medical Officer of the Board. As early as 1909 Sir George Newman recorded that 20 to 40 per cent. of the six million children in the public elementary schools of England and Wales suffer from extensive and injurious decay of the teeth, and that the vast majority of children of school age suffer from dental disease in some degree. It was realized that it was quite impracticable for local education authorities, even if they had been willing, to attempt to treat this mass of diseased teeth. Under guidance of the Board of Education, treatment has in the first instance been directed to the early permanent dentition and particularly to the first permanent molars.

112. The age group 6 to 8 years has formed the chief point of attack. Preventive and conservative treatment at this age with subsequent periodical inspection and supplementary treatment of children previously dealt with has been strongly advised. The first few years were largely experimental as to the best administrative methods to be employed for dental treatment. The following methods have been adopted:

(*a*) Private dental practitioners—in association or otherwise—working in special clinics under contract with the authority.

(*b*) Dental hospitals.

(*c*) School dental clinics conducted by whole or part-time dentists.

(d) Itinerant dentists in country areas with or without dental caravans.

113. Associated with dental inspection and treatment, schemes of educational work have been carried on among the

parents and by the teachers in the schools. This educational work has been partly directed towards oral cleanliness and the cleansing of children's teeth, beginning with the infants' schools, and partly concerned with the causes of dental caries. Sir George Newman states that the unsuitable feeding of children from one to five years of age is one of the chief causes of dental caries. He prefaced the section on dental disease and dental treatment in his annual report for 1912 with the following paragraph:

"It is no longer necessary to emphasize either the serious extent of dental caries among school children or the evil effects, direct or indirect, of such disease upon the general health. The reports received from all areas tell the same tale as in previous years—a tale of disease and of far-reaching injurious effects—and in localities in which no organized attempt has been made to deal with the problem it is evident that school medical officers, not unnaturally, are beginning to feel the comparative futility of reporting year by year on the same unsatisfactory conditions with their grave results. Nevertheless, appreciable advance has been made in dental treatment during the year under review and, difficult in many respects though the problem undoubtedly is, the experience already gained has shown that the question of the general methods to be adopted in combating dental disease must be considered to have passed out of the experimental stage."

114. In stating the result of his experience Sir George Newman added that the appointment of a dentist or dentists on the staff of the school medical officer was now generally recognized as necessary, and that the appointment of such officers served as a stimulus to the educational work which had been set in motion by medical inspection. He advocated strongly the undertaking of a scheme of conservative dentistry on a preventive basis and comprising the following:

(i) The practice of cleanliness of the mouth by the proper use of the tooth-brush or otherwise at least every night and morning.

(ii) The detection of dental disease at the earliest age possible by appropriate dental inspection.

(iii) The arrest of such disease by its prompt treatment in order to prevent further extension. Such treatment is generally a "stopping" or "filling" of the tooth, but extraction is not necessarily precluded from the practice of conservative dentistry.

(iv) The re-examination and "following-up" of the case at suitable intervals in order to maintain a healthy set of teeth.

He adds:

"An Authority which deals with disease in this way will have the satisfaction of treating not only the maximum number of children but of ensuring that in a comparatively few years the ravages of dental disease, as known to-day, will no longer exist."

115. The basis of a satisfactory scheme of school dental inspection and treatment should have regard to the following considerations, which are extracted from Sir George Newman's Annual Report for 1916:

(1) The arrangements, including the keeping of records, should be under the control and supervision of the School Medical Officer, on whose staff the dentist undertaking the work should be formally appointed.

(2) Dental inspection should be carried out by a qualified dentist, preferably by the dentist undertaking the treatment. In exceptional circumstances the Board are prepared, in the case of rural areas, to consider proposals for the School Medical Officer or Assistant School Medical Officer to undertake dental inspection, provided that it can be shown that they are conversant with the indications pointing to the need for conservative dental treatment, and are competent to perform:

(*a*) adequate dental examination with probe and mirror;

(*b*) proper dental recording.

Dental inspection should, as a rule, take place on the school premises and in school hours. It is not advisable that children should be sent to the private houses or surgeries of dentists.

(3) Attention should be concentrated in the first instance on the group of children from 6-8 years of age. Some dentists prefer to begin with five-year-old children. The "critical age" is, of course, the time of the emergence of the permanent teeth.

(4) An accurate record should be kept of each mouth examined and of the treatment carried out.

(5) The treatment should be conservative in character and accordingly the bulk of the treatment work should be by filling rather than extraction. Conservative dentistry includes also preventive measures, such extraction work as contributes to the preservation of the dentition as a whole, and any mechanical devices necessary to regulate the teeth.

(6) A school nurse, or other qualified attendant, should be present to assist the dentist at the time of treatment. The

attendance of a qualified nurse is desirable for two purposes:

(*a*) Attending to children before, during, and after anaesthesia, and dealing with nervous children.

(b) Assisting the dentist and saving his time by sterilizing instruments, preparing filling materials, filling up charts and treatment registers.

The substitution of an unqualified assistant for a properly qualified nurse may be inevitable on occasion, but the arrangement cannot be regarded as satisfactory. Apart from the greater experience of the latter in dealing with frightened, nervous children there is always the possibility of haemorrhage or other complications to be considered. In such emergencies an inexperienced substitute may be a source of anxiety and confusion.

(7) General anaesthetics, if required, should in all cases be administered by one of the Authority's medical officers, or by some other qualified medical practitioner.

In regard to the need for experienced anaesthetists for the purpose of general anaesthesia the following suggestions may be taken as furnishing the proper standard:

(*a*) When any general anaesthetic is necessary, it should not be given by the operator, except in case of exceptional emergency.

(*b*) The proper course for the Local Education Authority is to appoint a qualified medical man (whether a competent member of their staff, a local medical practitioner, or a specialist) as anaesthetist for all general anaesthetics in school dental clinics.

(*c*) If nitrous oxide gas is the only general anaesthetic used, there is no objection to one of the appointed school dentists giving the gas for another dentist.

(8) Provision should, as far as practicable, be made for the re-examination at intervals of not more than a year, of children who have received dental treatment, and for supplementary treatment if this is found to be necessary.

The annual reinspection of children also who have passed through the dentist's hands is at least as important as the inspection and treatment of new cases; if this work is allowed to get seriously into arrears the benefit of conservative work done will be largely nullified. The periodical inspection of children with healthy dentures is most important; the consent of parents who at the time of the previous inspection refused to have their children treated should again be sought.

(9) The accommodation proposed for a dental clinic should include as a minimum (*a*) a play-room or waiting room, (*b*) an operating room (with good north light preferably), and (*c*) a small rinsing room, which can be used also for recovery after the administration of an anaesthetic.

(10) The dental scheme should be appropriately co-ordinated with the whole scheme of treatment devised by the Authority, particularly that part of it concerned with the therapeutics of the ear, nose, and throat, the tuberculosis dispensary, and institutions such as open-air schools, children's sanatoria, and residental recovery schools. An adequate account of the work carried out should appear in the School Medical Officer's Annual Report to the Board.

116. *The Committee attach the greatest importance, in the interests of the general health of the community, to the early establishment in the area of each local education authority of a complete scheme of dental inspection and treatment.*

It is not necessary for us to quote in detail the evidence submitted by witnesses as to the paramount importance of school dental work. The representatives of the British Dental Association, the Incorporated Dental Society, the School Dentists' Society, the Medical Officer of Health of Birmingham, the School Medical Officers and Medical Officers of Health of Shropshire, Derbyshire and Rhondda, representative laymen like Mr. Sidney Webb and Mr. W. C. Anderson, M.P., have all strongly emphasized to us the importance of the complete development of this branch of medical inspection and treatment. If the new Education Act had not contained a section making it the duty of local education authorities to provide for the dental treatment of children in attendance at public elementary schools, the Committee would have considered it its duty to submit a recommendation strongly urging this alteration of the law.

In the existing circumstances the Committee emphasize the importance of the Board of Education using its powers to obtain with as little delay as possible the provision of adequate dental treatment for the 6,000,000 *children in elementary schools, which it is now the duty of the local education authorities to provide.*

117. The number of Local Education Authorities which undertook dental treatment of children in attendance at Public Elementary Schools during the year ending 31st March, 1918, was 151. In October, 1918, 306 school dental clinics were being

maintained and the number of school dentists employed was 239, of whom 49 were whole-time officers.

118. Three factors have hitherto hindered the provision of a complete scheme of dental treatment for school children. They are in order of importance:

(1) The considerable expenditure entailed.
(2) The shortage of dentists.
(3) The absence of a public demand.

As regards (1), many authorities have not hitherto instituted any scheme of dental treatment for children in need of it, and although there are some exceptions, few authorities are doing more than examine and treat the children in the 6-8 year age group.

With reference to (2), the evidence, undoubtedly, is to the effect that there is a very acute shortage of dentists available for school dental work, especially at the salary and fees which local education authorities are prepared to pay. A large proportion of school dental work is of a routine character. It mainly involves three branches of work:

(*a*) Careful examination with probe and mirror.
(*b*) Extractions and treatment of temporary teeth.
(c) Treatment of the first permanent molars.

There is, however, in a smaller degree, work calling for the highest judgment and skill on the part of the dentist, which involves not merely the alleviation of pain or treatment of disease, but the future dental history of the child. The object aimed at should be to prevent disease by timely and proper treatment, the first factor of which is to do all that is necessary to allow the teeth to take normal position in the dental arch.

(To be continued.)

Dental Societies

PRESIDENT'S ADDRESS

J. E. Rhind, D.D.S., Toronto.

Delivered before the Ontario Dental Society, April, 1919.

Members of the Ontario Dental Society:

The last three Ontario Dental Conventions were held with the shadow of a great war resting darkly over us. How grateful we should be that our armies and those of our Allies have triumphed, and let us hope that the Peace Treaty soon to be signed will forever prevent the recurrence of such a terrible catastrophe. The members of the dental profession serving in the Canadian Army Dental Corps did much to fit men for active service, and will now be called upon to make them fit to resume their duties as citizens in peace times. Through their services the importance of oral health has been impressed upon thousands of young men in such a practical way that it will never be forgotten.

The Convention of 1918 decided that the Constitution and By-laws of this Society should be revised and brought up-to-date. The Committee appointed then have spent much time and thought upon the matter and will present a report for your consideration.

The Constitution and By-laws of the Canadian Dental Association have been re-drafted within the past year. Provision has been made for representation from this Society on the Executive Council of that organization, and I hope that advantage of that privilege will be taken by electing certain members to represent the Ontario Dental Society.

For some time past negotiations have been going on tending towards the taking over by the University of Toronto of the teaching of dentistry as one of the University faculties. It appears that this would have many advantages if it can be arranged on a satisfactory basis. It would be well for the members of the profession to give this subject their serious thought, discuss it with their representative on the Board, read the minutes of the Board which are sent to them each year, and so be prepared to deal intelligently with this important matter at the proper time.

The subject of trained help for the dentist is one that might be considered, and suggestions offered by this Society. In conversation with Dean Webster I have learned that the College has under consideration "An Assistants' Course," which would provide training in secretarial work, record-keeping, sterilizing, etc. This should meet one particular need at least. But what of the "Woman Dental Hygienist" who has been recognized by statute in a number of the States in the neighboring Republic? Her sphere of work is pretty much limited to prophylaxis under a dentist's supervision, and the instruction of mothers and children as to the importance of a healthy mouth. Is the dentist shirking his responsibility in handing over these important duties to a non-graduate, and will it not be difficult to restrict the sort of operations which may be performed? Many good ideas have come to us from the United States, but I think we should be slow to adopt this one.

The Department of Education of the Province of Ontario has decided to appoint a Dental Inspector. His duties at first will largely consist in arousing an interest in dental inspection throughout the Province, and in helping to organize local clinics. This is the most progressive step in dental legislation which has ever been made in this Province, and the report of the Oral Hygiene Committee will deal more fully with it.

ONTARIO DENTAL SOCIETY CONVENTION

MAY 3, 4, 5, 6, 1920

Opportunity knocks once—then goes away. This is an old and perhaps somewhat trite expression, but just as true now as the day it was coined. And it is particularly applicable in these days of rapid change and swift progress, when only the well-trained can hope to reach the goal of ultimate success.

It is because we believe that the 53rd Annual Convention of the Ontario Dental Society offers all who attend a real, tangible *opportunity* to secure new knowledge and practical training in the best improvements of our science, that we urge you to be present.

You will remember in the old college days what stress was laid upon being *thorough,* and the advantages that accrued to the fortunate individual gifted with the time and the ability for research work. Practically all the greatest discoveries in the world are the result of painstaking research. Think what it means to have the best and latest in your science laid almost at your doorstep—yours for the taking at the Annual Convention.

For, in a very real sense the result of years of patient research in the best equipped dental laboratories in the world are yours for the having. Eminent specialists, who have spent years of their lives working out valuable dental discoveries, will fully demonstrate the application of the new discoveries and their actual place in practice. Progressive clinics will be conducted in all branches of your profession, and all that is practical and best in practice will be fully revealed to you.

Are you taking *your* place in these swift-striding times—*the place* for which your talents fit you? The top of the ladder is attained by those who help themselves, and the post graduate studies of our annual convention play a very real part in the practice of the modern dentist.

Don't forget the dates, May 3, 4, 5 and 6, in Toronto.

Yours faithfully,
C. E. Brooks,
J. P. MacLachlan,
Publicity Committee.

DETROIT DENTAL CLINIC CLUB

COURSE D.

Prosthodontia Section.

1.—*Preliminary Impressions and Their Significance.*—Reason for making preliminary impressions—Value of having articulated models in explaining dentures to patient. *Making Preliminary Upper Impression*—Examination of mouth—Selection of trays—Working properties of Compound—Insertion of tray into mouth—Muscular movements—Chilling the compound by means of sponges. *Making Preliminary Lower Impression*—Examination of ridges—Selection of tray—Insertion of tray into mouth—Muscular movements—Chilling and removal from mouth. *Clinicians' Talk to Dentist*—Opportunity to study idiosyncracies of patient—Reduction of spongy tissue or ridges—Can estimate difficulties to be overcome—Fee for this consultation service.—By Dr. Frank W. Holt, Detroit.

2.—*Preliminary or Study Models and Their Individual Impression Trays.*—Value of—Use of Greene-Kerr Approximate Metal Models—Pouring impression—Insertion of metal model—Swaging trial baseplate and individual impression tray—Making compound impression tray or CORRECTABLE impression.—By Dr. V. B. Rea, Detroit.

3.—*Test Impression of the Upper Arch.*—Manipulation of compound—Securing equal pressure on hard and soft parts —Making the impression in steps—Seating the impression—Conforming impression to muscles and tissues on the right side—(in other words, muscle trimming)—Conforming to superior labial fraenum—Conforming to muscles and tissues on the left side—Determining length of expectant denture or "post-damming"—Conformation of compound to tuberosities —Conformation of compound to buccal and labial aspects of the ridge—Testing finished impression.—By Dr. T. Cannon, Detroit.

4—*Test Impression of the Lower Arch.*—Area of surface to be covered—Reasons for using "Correctable compound impression tray"—Seating impression—Muscle trimming on right side—Muscle trimming of labial aspect—Muscle trimming on left side—Conformation or trimming of lingual aspect of ridge on right side—on left side—of lingual fraenum —Test for fit.—By Dr. William A. Matheson, Detroit.

5.—*Working or Correctable Models—Try-in Plates and Bite Rims.*—Pouring impressions using Greene-Kerr Approximate Metal Models—Swaging tin try-in plate on study model —Value of try-in plate—Reproduction of irregularities and rugae of the individual case—Selection of wax—Building bite-rims.—By Dr. Lloyd Rogers, Detroit.

6.—*Taking the Bite—Mounting on the Articulator.*—Marking Median line—high lip line—rest line—low lip line—Attaching bite stem to wax-bite rim—Adjusting face bow to patient's head—attaching bite stem to face bow—Transferring face bow, bite stem and trial plates from patient to articulator—Selection of articulator—Attaching correctable models to the trial bite plates—Mounting on the articulator.—By Dr. Chas. Lane, Detroit.

7.—*Selection of Teeth—Trubyte System.*—Synopsis of the entire system—Dr. J. L. William's discoveries—Fallacy of the temperamental theory—3 distinct types of faces—3 distinct types of teeth—Laws of harmony—Harmony between face form and tooth form—Finest harmony—Approximate harmony—Disharmony—Classification of tooth forms—Consideration of Class I—severe square type—Consideration of Class II—severe tapering type—Consideration of Class III —severe ovoid type—The 14 modifications—Selection of proper size tooth with reference to oral orifice—Manner of selecting molar and bicuspids—Form of line of occlusion in arrangement of teeth predetermined by shape of central incisor and shape of face—Shading of trubyte teeth harmonious with shading in natural sets.—By Dr. P. C. Lowery, Detroit.

8.—*Arrangement of Teeth to Produce Normal Balance Bite.*—Arrangement of six anterior teeth to produce a characteristic expression to suit individual needs of the case—Arranging the posterior teeth so that when—during the masticating function—the stress will be applied to the ridge in the proper direction—Arranging the lower teeth in occlusion with the upper—Testing the teeth for "working bite"—Testing for "Balancing bite"—Developing contour of buccal and labial flanges of the dentures in wax—Developing gum festoons—Development of rugae—Trial of dentures in the mouth—Making polishing plate for palatal portion—Making polishing plate for buccal and labial portions—Removal of casts from articulator.—By Dr. Elmer L. Whitman, Ann Arbor.

9.—*Flasking—Packing—Lining—Vulcanizing—Carving for Esthetics—Finishing and Grinding-in of the Dentures.*—Selection of flask—Method of flasking—Use of Greene-Kerr occlusal retainers—Selection of rubber—Heating rubber before introducing it into the matrix—Heating the matrix previous to packing the rubber—Method of packing—Method of hand-testing to determine amount of rubber in the matrix—Value of lining dentures with a metallic substance—Flask closing—(initial stage)—Selection of vulcanizer—Use of vulcanizer of this type—Advantages—Heating up the case—Closing flasks in the vulcanizer—Time for vulcanizing rubber—Tempering rubber—Finishing the denture—Carving for esthetics or burring—kind of burrs used—Trying dentures in the mouth—Grinding in of the dentures on the articular—Final polish of the dentures.—By Dr. W. H. Waller, Detroit.

10.—*Motion Picture Clinic Entitled*—"Technic for Making Impressions and Models for Artificial Dentures."—By Dr. W. A. Giffen.

ONTARIO DENTAL SOCIETY

The fifty-third annual meeting of the Ontario Dental Society will be held in Toronto, Ont., May 3th, 4th, 5th and 6th. Progressive clinics will be a feature of this meeting.

J. A. Bothwell, Secretary.
2 Bloor St. E., Toronto.

PROGRAMME—ONTARIO DENTAL ASSOCIATION TORONTO

Monday P.M.—1.00—Dr. Stillman (New York) Periclasia. Opening—President's address, etc., etc.

Tuesday A.M.—Hamilton Clinic. Dental Educational Association.

Tuesday P.M.—Dr. H. Box and Dr. McCall (New York) Periclasia.

Wednesday A.M.—Periclasia Clinic. Other clinics.

Wednesday P.M.—Detroit Clinic (crown bridge section). Hamilton Clinic.

Thursday A.M.—Detroit Clinic. D. E. A.

THOSE WHO TOOK PART IN THE THE HALL CLINIC REPRESENTING THE HAMILTON DENTAL SOCIETY

No. 1—Dr. J. E. Johnson (Impression Tray).
No. 2—Dr. J. A. Locheed (Finish Impression).
No. 3—Dr. S. Clappison (Boxing the Impression).
No. 4—Dr. Max Morrow (Use of the Jig).
No. 5—Dr. P. Moore (Trial Plates).
No. 6—Dr. Furlong (Setting up Teeth).
No. 7—Dr. H. A. Robertson (Waxing and Flasking).
No. 8—Dr. F. L. Williamson (Packing and Vulcanizing).
No. 9—Dr. Joe Stewart (Finishing and Grinding the Bite).

Editorial

EDITOR:
A. E. Webster, M.D., D.D.S., L.D.S., Toronto, Canada.

ASSOCIATE EDITORS:
ONTARIO—M. F. Cross, L.D.S., D.D.S., Ottawa. Carl E. Klotz, L.D.S., St. Catharines.
QUEBEC—Eudore Debeau, L.D.S., D.D.S., 396 St. Denis Street, Montreal; Stanley Burns, D.D.S., L.D.S., 750 St. Catherine Street, Montreal; A. W. Thornton, D.D.S., L.D.S., McGill University, Montreal.
ALBERTA—H. F. Whitaker, D.D.S., L.D.S., Edmonton.
NEW BRUNSWICK—Jas. M. Magee, L.D.S., D.D.S., St. John.
NOVA SCOTIA—Frank Woodbury, L.D.S., D.D.S., Halifax.
SASKATCHEWAN—W. D. Cowan, L.D.S., Regina.
PRINCE EDWARD ISLAND—J. S. Bagnall, D.D.S., L.D.S., Charlottetown.
MANITOBA—M. H. Garvin, D.D.S., L.D.S., Winnipeg.
BRITISH COLUMBIA—H. T. Minogue, D.D.S., L.D.S., Vancouver..

VOL. XXXII. TORONTO, MARCH 15, 1920. No. 3.

DENTAL ADVERTISING

The Quebec "Telegraph" makes a splendid sounding plea for the advertising dentists of that province. It says the advertisements are the only means the general public have of knowing what dentistry can do for them. This, to a large extent, is true, and it stands to the everlasting disgrace of dentistry that it makes little or no effort to acquaint the public with what a dentist can do and what is impossible. But when the "Telegraph" says that the advertisers are the modern dentists, and by their advertisements really increase the demand for dentistry for the so-called old fogies who do not advertise, it over-states its case. The advertising dentist does so usually because he finds that his skill does not attract a clientele. The fact is, the advertising dentist is the old fogie whose ability does not attract. Years ago most dentists advertised. Refined people do not usually laud their own skill in the public press or upon billboards. The "Telegraph" old-fashioned dentists are all busy now, so they do not need the help of the "moderns." It is remarkable how many newspapers have "noticed" that dentists may advertise in Quebec. "It's an ill wind that blows nobody good." Thick-skinned dentists in any other province can advertise their virtues.

DENTAL TREATMENT

Probably no recent development has proven of greater benefit to humanity at large than the disease-preventive discoveries of modern dentistry in eliminating disease, brightening the mentality of the dull and bringing greater enjoyment and length of life to a large number of individuals. Dental inspection and dental clinics were introduced in all the schools of a municipality when initial inspection showed a deplorable condition, with little or no real knowledge of dental hygiene. The mouth conditions were very bad, with disease germs freely circulating. So the dentists started to work and amazing results were shown in a remarkably short time. In five years, decay in some 15,000 children's teeth was reduced a third. The death rate from diphtheria, scarlet fever, and measles was reduced 70 per cent.; and when the influenza epidemic raged some eighteen months ago, the death rate was the lowest. So much for the disease-preventive feature. The effect upon the intellect of a large number of children was even more remarkable. Children who failed to pass examinations were cut down by half; and more than 59 per cent. of the cost of re-education was saved. This is the actual experience in one centre, where accurate records were kept of the work; and gives a pretty fair idea of the actual working out in all centres that have tried modern dental inspection coupled with intelligent practice.

Editorial Notes

Dr. Lloyd Jones has begun practice in Niagara Falls South.

❧

Dr. T. R. Patterson, Almonte, has been dental inspector for district thereabout.

❧

The students of the dental faculty of McGill held a banquet at the Windsor, Montreal, March, 1920.

❧

A dentist is needed on the west coast of Alaska. So says Miss Virginia Clark, a native school teacher.

❧

Dr. Joseph McGuire, Prince Rupert, offers half of his time to the service of the school children of the town.

Dr. V. D. Wescott announces the opening of up-to-date dental offices at 54 Hastings Street west, close to the Pantages theatre.

⁂

Miss Catherine McKenzie, a graduate of the dental department of Dalhousie University, is the first woman to practice dentistry in the Maritime Provinces.

⁂

Drs. W. B. Shantz, A. E. Rudell and J. A. Hillard, Kitchener, Ont., reported to the Board of Education after making an examination of the teeth of the school children of that city.

⁂

Dr. A. S. Wickware, of Smith's Falls, has been appointed dental inspector of the schools of that town and adjacent country, working under the chief inspector at Toronto.

⁂

Until a few weeks ago dentistry was taught in McGill in the faculty of Medicine. Dentistry is now an independent faculty with all the rights and privileges of any other faculty in the university.

⁂

Drs. Schwalm and Bailey of Winnipeg have gone to London to carry on dental practice there. They were recently granted licenses by the General Medical Council of Great Britain.

⁂

The Quebec legislation has so amended the act that the board no longer has power to pass by-laws which have for their object the prevention of dentists from doing things that may be derogatory to professional dignity.

⁂

Dr. H. F. Arnold, who lives in New Westminster and works in a dental office in Vancouver, was injured slightly in an automobile accident on Kingsway. He was removed to the Royal Columbian Hospital, New Westminster, for treatment.

⁂

Victoria, B.C.—Dr. W. Mason was appointed school dental officer by the School Board recently. He will have his office in the Central School, and will attend to dental work among the pupils as well as lecturing on dental matters.

The Quebec Dental Board were refused an appeal from the judgment of King's Bench Court of Quebec in connection with proceedings against Mr. Gaston Maillet a Montreal dentist who had violated the Dental Act by improper advertising.

⁂

Dr. A. R. Baker, one of the best known dentists in Greater Vancouver, was elected President of Vancouver Gun Club at the annual meeting held in the Hotel Vancouver. Dr. Baker is also head of the Game Conservation Board of the Province of British Columbia.

⁂

Over 90 per cent. of the children examined need dental attention. Oral hygiene is greatly needed. The report suggested that a thousand dollars be set apart to care for the teeth of those who are unable to pay for it, and that teachers inquire of the pupils each week if they have had dental attention.

⁂

The Brockville "Recorder-Times" says in an editorial that "Judging from the reports of the dental survey of the school children of the province, dental inspection has not come a minute too soon, and too prompt action cannot be taken to remedy these ills and create the healthy mouth conditions upon which so much of the well-being of the individual depends."

Dominion Dental Journal

Vol. XXXII. TORONTO, APRIL 15, 1920. No. 4.

Original Communications

PRESIDENT'S REPORT OF THE CANADIAN ORAL PROPHYLATIC ASSOCIATION

W. C. Trotter, B.A., D.D.S., Toronto.

Owing to the unfortunate illness of our worthy President, Dr. McDonagh, the duty of presenting the President's address devolves upon me as Vice-President. It is deeply to be regretted that so many members of the association, including members of the executive and educational committees, are unable to be present owing to illness.

According to our constitution this annual meeting should be held on the third Monday in January. We had planned to have our old friend, Dr. Gies of New York, give us an address and to make it an open meeting. He had expected to be in the city attending another meeting at the University on January 29th, so we arranged to postpone our date from the third Monday, or the 19th, to the 29th. However, when a few of us met together on the 19th to carry through the official postponement, we learned to our sorrow that owing to the smallpox epidemic in Toronto, Dr. Gies' trip had been indefinitely postponed, so we then arranged for this date at the request of some out-of-town members and this is the postponed meeting of the 19th of January.

The past year has been the most satisfactory year in our history, especially from a financial standpoint. A careful study of the financial report will readily convince you of this fact. Our cash surplus is steadily growing, and is likely to grow rapidly during this year owing to the brushes we have on hand yet to be disposed of. It was exceedingly fortunate for us that we had this stock of brushes accumulated at low prices. Since the war Kent & Sons have made advances in prices of first 50 per cent. and now 15 per cent. more, so it is becoming quite a problem to decide how to order and yet maintain retail prices even at the advances they now sell at. The demand for our brushes continues to increase, as the sales indicate 216 gross more sold than during the previous year. In the case of our other products, viz., paste and powder, we have not been quite so successful, as the year's operations show a decreased sale amounting to 70 gross. Now this is probably due partly to the retail price having been advanced and partly to the energetic and costly advertising of one of our competitors. I am also convinced that it is advisable to make a change in the composition of these preparations of ours and would like a discussion along that line to-night.

The time has now arrived when it seems expedient to engage the full time services of a reliable and competent manager. Such a man must necessarily possess a rare combination of gifts to be a success. He must have exceptional executive and business ability combined with a thorough knowledge and understanding of our educational aims. Besides possessing these qualifications he must be a convincing talker and be full of original ideas. If any member knows of such a prodigy, please let the executive know.

I firmly believe that with a competent manager constantly pushing forward the demand for our goods, our business would be doubled and trebled within a year or two. I might here state that we have placed a small experimental order for brushes with the Dominion Toilet Brush Co. of Morrisburg, but are not very sanguine of the results. The manager, Mr. Challis, has had several interviews with members of the executive committee. The work of the Dental Research Committee of the University has steadily progressed during the year until now we have a lady assistant who has become thoroughly trained in the special technique necessary for this line of investigation. Under the supervision of Drs. Box, McDonagh, Webster, Day and others, this work is now being divided in such a way as to lead us to expect more definite and decided results during the coming year. It is unfortunate that neither Dr. McDonagh or Dr. Webster, who have had this work in hand, are able to be here this evening to give you details in connection with that work of which I am not conversant.

Your officers are now of the opinion that the time may have arrived when it is advisable for us to resign from our appointment as the Educational Committee of the Canadian Dental Association. This should be discussed at this meeting.

Although we have been unable to arrive at any definite and permanent arrangement with the Educational Committee of the Province of Quebec whereby, as suggested by them, they would handle our products in that province, we made a direct contribution of $200 to aid them in their work.

Dr. Black finding it impossible to devote the necessary time to the work of the Educational Committee, asked us to accept his resignation. This we reluctantly did but were fortunate in being able to persuade Dr. Adams to take his place.

As is customary we ask you to pass a budget by-law authorizing the expenditure of a sum which the treasurer estimates will cover our incidental expenses for the coming year.

The most satisfactory way of spending our steadily increasing surplus offers a live subject for discussion. Let us have your views.

The directors have decided to change the date of the annual meeting from the third Monday of January to the third Tuesday, to avoid conflicting with the meeting of the Toronto Dental Society.

MANAGEMENT OF PULPLESS TEETH NOT PAINING AND THEIR RELATION TO OTHER DISEASES

A. E. Webster, M.D., D.D.S., Toronto.

Read before the Ottawa Dental Society, March, 1920.

It is impossible in the time at our disposal in an address of this kind to cover the whole broad subject of focal infection and its relation to general disease. Therefore, the subject indicated in the heading has been chosen because it is most frequently met with in dental practice and has to do both with sick and well people with equal local manifestations of disease and yet demanding wide differences in treatment.

If any of you should go to a builder and say: "What will you charge to build a house for me?" the builder most likely would not answer your question, but would ask several other questions, and then say: "It is impossible for me to tell you now; I will consider your question and give an approximate answer later." Or, if you should say to the same builder: "What is the best material out of which to build a house?" As in the other case, he would need to know many governing factors before a definite answer could be given.

If a patient says to us: "What is the best tooth filling material?" we cannot say; several important factors must be determined first in regard to where and by whom placed, etc.

Here are questions in which the young graduate and some older ones are intensely interested. Is it safe to extract teeth for a pregnant woman? Or, will you tell me some sign or symptom by which I may know whether it is safe to administer a general anaesthetic or not? An answer to either of these questions cannot be determined without the study of a great number of important factors upon which an intelligent answer might be based.

In view of what has been said, and your general intelligence, I feel that you don't expect me to give you a set of infallible rules by which you can determine in every case by what means pulps should be devitalized or roots filled. Much less to determine whether certain local lesions of the pulp or peridental membrane are the cause of a great variety of symptoms roughly classified as being caused by focal infections.

The dentist of to-day who is not prepared to study the foundational principles of medicine and test these up with his own experience, is liable, through the influence of an erratic medical friend or two, to be driven to believe that the human teeth are the causes of all diseases from falling of the hair to inflammatory flat foot. No, there is no sign, no symptom, no one definite thing by which it may be determined whether a patient now suffering from some systemic disease has its origin in a certain rarified area on a tooth or not, but by the study of a great mass of clinical evidence and by a determination that the pathological conditions present in the case are the same as those of others, it may be reasonably suspected that the lesion in question is the likely cause. In other words, a conclusion or a diagnosis is arrived at by first having a knowledge of the cardinal symptoms of all diseases and then comparing these with those present and deducing from them the most likely cause. A thorough dental examination upon which a diagnosis may be made is not as simple a thing as some of our physician friends think. However, the gravity or non-gravity of the symptoms as made out by him must determine the dental treatment to be followed in most cases.

The condition of the peridontal membrane is the determining factor in the treatment of all non-paining pulpless teeth whether there are general symptoms present or not. Effort must be made to diagnose the condition of this important dental tissue.

In the past, dentists have been inclined to consider diseases of the gums as something apart or different from diseases at the apices of roots. In either case, not only part but the whole of the membrane is involved, and while the point of origin may not have been identical, yet the results may be the same.

Generally speaking, there are several methods of treatment for non-paining pulpless teeth, depending upon the family history, anatomical and pathological conditions present, and the physical condition of the patient. These three factors must be weighed together in arriving at a rational treatment. There are a number of teeth of such an anatomical form and in such a position that there can be only one safe treatment, extraction, and there are those whose pulps died before calcification at the apex was completed, which require the same treatment, especially in cases of multi-rooted teeth. If the peridontal membrane has lost over one-third of its attachment radical treatment is indicated. In the third place, if there is a poor family history and the patient is suffering from a grave systemic disorder, no possible source of infection should be left, even to the extent of extracting teeth with but little or no rarification at the apex.

Having indicated one method of treatment, let us now consider what conservative dentistry can do. As indicated earlier in this communication, the method of treatment depends on the pathological conditions of the peridontal membrane.

If the root-end is encapsulated, then surgical and medical root canal treatment is all that is needed. But if the root canal is infected and there is no extension beyond the apex, a much more careful root surgery and treatment is necessary to prevent infection beyond, and at the same time disinfect the tooth tissues without destroying the soft tissues at the root end.

The condition of the peridontal membrane is determined by taking into consideration a great number of factors. Other things being equal, the earlier in life the pulp dies the less chance there is for a healthy peridontal membrance. The longer the pulp is dead the poorer the condition of the membrane. No pulpless tooth is as useful in mastication as a normal tooth. The amount of pressure borne by a tooth in closure is a fair indication of the condition of the membrane. The firmness in the socket and the color of the tooth, as well as the appearance of the gum overlying the root, help in a diagnosis. Light pressure or slight percussion may be useful means of determining the state of the peridontal membrane, but this may be misleading because acute irritations elicit the same symptoms from which the membrane may recover, leaving no evil consequences.

Acute irritations from trauma, calcic abscess, over-work, pulpitis, and certain kinds of diet will bring about peridontal symptoms similar to those elicited from percussion in chronic cases. Pulpless teeth often have a certain kind of lameness following fatigue, exposure to cold, over-exertion, or exhausting diseases. In fact, some people's teeth act as a kind of barometer of their physical condition. A careful physical examination of the tissues over the root, and especially the apex of a pulpless tooth, will give valuable information. The color and the general appearance of the gums will indicate the state of the tissues beneath and often show if there had ever been a sinus or not. If the pulp cavity is opened and explored to the apex, and dryness or moisture or a flood of pus or blood or cystic fluid is found, a diagnosis is made easier.

From what has been found, a diagnosis can be made sufficiently accurate for radical treatment, but if conservation treatment is to be undertaken, a more accurate state of the peridontal membrane and the surrounding tissues must be obtained, because it is useless to attempt medical treatment of roots if a granuloma is present. An X-ray is necessary to complete the diagnosis.

The X-ray may show the peridontal membrane normal in thickness and no detachment from the root or other sign of disease though the pulp is dead and the canal perhaps infected.

There may be a general thickening of the membrane due to a low grade of infection from the pulp canal, but not sufficient to cause a deep destruction of the tissues. This thickening must be differentiated from thickening due to over-work or some local irritation.

If the irritation is more severe there will be a slow loss of bone around the apex and its replacement with granular tissue, in some of these cases the end of the root may be absorbed or eroded.

In a more active variety there will be loss of bone and suppuration, which will be indicated by an irregular outline in the picture. In some cases of rarefying ostitis around the root end there may be a compensatory condensing ostitis around this again, which will hinder the rarification showing in the picture.

A chronic rarefying ostitis with cyst formation will appear with a regular and well defined outline.

In conjunction with the various conditions found by the X-ray, the peridontal membrane is always more or less affected, depending upon the direction and extent of the destructive process.

The methods of treatment when there has been no destruction of the peridontal membrane is to remove the root canal contents, sterilize the cavity walls and mechanically or medico-mechanically fill the canal.

If there is but slight or only apical destruction of the membrane, simple trephining and washing through the sinus, sterilizing cavity walls and filling is all that is necessary.

When any portion of the membrane is eroded or lost from the root-end, it is desirable to curette or smooth off the root-end as well as remove all the infected tissue around.

If the end of the root seems to protrude into an abscess or cyst cavity, it is well to cut all the root-end off not covered with the peridontal membrane, fill the root canal and cover the exposed dentine in the root-end with Howe's silver solution or amalgam, closing the wound or keeping it open according to the surgical indication.

THE QUESTION OF SUFFICIENT RENUMERATION FOR DENTAL SERVICES

A. C. Jack, D.D.S., Montreal.

Read before the Montreal Dental Club, March, 1920.

Mr. President and Gentlemen:

When I was asked by your president to write a paper on "Charges for Services in Dentistry, or Dental Fees," and read it before you, I thought at the time, and even more so now, that he might have chosen a more proficient person than myself to do justice to this subject, which is uppermost in the minds of more than just a few of us. I have talked on this subject to a number of members of this club privately from time to time, and know that it is of vital interest to some anyway.

The subject has never been thoroughly discussed amongst English-speaking dentists, who control the dental practice of the western half of our city, and of whom the Montreal Dental Club is the representative body. I accepted the honor given me by your worthy president for the reason that there is no apparent co-operation in this regard amongst us, and if this paper can bring about a thorough discussion, I think it will be to the benefit of the profession in more ways than one. Let us have a definite understanding on this subject. We have not far to look before we see co-operation in other professions—take medicine, for instance. It was not so very long ago that I can remember quite distinctly that a visit to a medical man's office would cost you one dollar; if he came to see you at your home, two dollars; but one day it was two dollars at his office and three dollars if he called on you, and it was every doctor. Perhaps there was an exception or two, if you wanted to hunt for them, but we did not know those exceptions. Was not this co-operation? Lawyers, I believe, have a minimum fee; notaries also, and architects their recognized percentage. What does the layman think of a profession who do not at large recognize the value of their services, when in one city block, in half a dozen or a dozen offices therein he can have a tooth extracted, with prices ranging from a dollar to ten dollars, with or without freezing, as he calls it? I am only mentioning extractions as an example; it applies to all our work.

Every member in this room, I venture to say, has had the experience of having had to educate a patient to the value of a service rendered at even a very moderate fee, and with more or less success. We all glory in getting a patient who appreciates our work and has no grudge in paying for it. Among this class I have noticed in my practice are those people who have come from the United States to settle here. They have been taught to value the service the dental profession renders and appreciate it. How has this been brought about? You can see co-operation in all trades and professions. Even our dental laboratories in the city have recently combined and raised their prices to a set figure on different work, and perhaps you have noticed in the papers that the union of mechanical men in New York have struck for higher wages and shorter hours. I believe the dental profession, that is, the ethical men of Toronto and all the large cities in the United States, are averaging more for their services than we are here.

Why should not the dentists in every town or city where there are more than one man practising, combine and set a minimum fee for their services satisfactory to all of them? This has been done in some places. I am beginning to think that the dental profession here in this city is the only one that is without co-operation, and at a time when we most need it—a time when the cost of living is beginning to or has excluded the, what we may call, ordinary luxuries of life that we have been used to.

It is not my intention in this paper to go into the details of carrying on a practice—that has been taken up by articles in various magazines—only to say that efficiency counts for everything. You will save your own time, your assistant's time, and your material, and this means money. Since the advent of the income tax, many of you no doubt know better now how you stand in regard to running a practice from a business standpoint. You have learnt, or it was forced upon you to discover, what your gross income and expenditure were, and I can imagine it caused you a lot of deep thinking. But have you gone farther after you knew what your expenditure and income were? Have you given a thought to figuring out the number of hours of hard work you have given to obtain your gross income? Then by simple division to tell what you made each hour, and, if you have, were you satisfied? Have you allowed time for regular recreation, pleasure, rest and outdoor exercise? Have you given yourself time to read your dental magazines and new books, or to go somewhere and brush up on any branch of dentistry you feel rusty on, and learn other men's methods, and if you have, to come back to your offices and put into your practice the good you have obtained and give your patients the benefit?

Do you give yourself time to test out the materials or methods in your laboratory, or do you take the other man's word for it? The opinion of the dental supply house salesman, or the dental laboratory that furnished the advice or material. I will leave you to answer them. I do not know if you have. I think, though, that every man practicing dentistry should compel himself to answer these questions for the benefit of himself, his family, and his patients. But I do know that you cannot answer those questions in a satisfactory manner if you are not getting sufficient remuneration for your services to allow yourself the time to do these things I have mentioned. Not to work both night and day, holidays and Sundays to make just enough to live on. Dentistry is lacking in individual research, and this Province of Quebec is far behind.

Men of the past had a tendency to minimize the value of dental service to their patients. At the present day some men are still doing the same thing, mostly, I presume, to soothe the fears of the patient, financial and otherwise. If you minimize the value of the service, the patient minimizes the fee he or she should pay for that service. You have given your time, your material, your education and experience, still they say it is nothing very much. Have they forgotten so soon the struggle they went through to pass their matriculation and get their degree? There are other men endeavoring to teach the value—their task is only made harder by the others. If we are going to teach the public the value of our services and raise the profession in their esteem, let us talk ethics for a few seconds. Sometimes one is sorely tempted to condemn another man's work, but why do it to the patient? You may be right in a great many cases, but if you get the habit you will be wrong in some cases also, for you do not know or take time to think how long ago and under what conditions it has been done. Your own work at the same time and under the same conditions might look as bad. What is the impression on the patient? Does this critism do any good to the profession you wish to elevate? We cannot teach the value of dental services that way. Give the patient your professional advice on the case and let them do the thinking, which will be only as regards the individual, not the profession at large. I had a case of a patient recently who left another dentist simply because he had spent the time of her first appointment criticizing another man's work. It sounded cheap coming from a patient.

The dental colleges will do great work if they continue turning out their students with the right idea of the value of dental services. The men in practice must back up the new graduate. If we come to an understanding and co-operation on dental fees, we must first fix the minimum value we place on our services. Next, how shall we charge for those services? There are three ways that I can see of doing this:

First—To charge for time spent, taking into consideration all overhead expense, labor and material.

Second—To charge for time spent, plus all laboratory labor and material.

Third—To charge by the operation or operations rendered.

This question of charging by time or operation has been discussed by other clubs and societies, and as far as my information goes, both ways have supporters, but I hope the discussion will bring out your opinion in regard to this. There are so many and varied operations in dentistry, that it would be a very hard matter to set a minimum charge on each.

I find when I figure charges, I have always had to consider the time spent. One of the greatest difficulties I experience, and no doubt the rest of you, is in making the public appreciate the amount of time taken in completing an operation. The prevailing idea that occupies their thoughts is the article produced.

Supposing they had to have their appendix removed. They call on the surgeon; he 'phones the hospital to get a room; they drive down, they pay the cab or ambulance, they pay for their room, their attendance, the anesthetic, the operating room fees and any extras. The surgeon takes, on an average, twenty minutes for the operation; he sees them himself three or four times before they are discharged cured, and he renders them a bill from $200 and up. He has not supplied one thing to that operation, except the renting of an office and the interest on the outlay of furnishing that office, and his time, twenty minues for operation, visit to office or home fifteen minutes, three or four visits of ten to fifteen minutes in hospital, which amounts to one hour and a quarter, say one hour and a half, of which thirty-five minutes was actual work. But he does a lot of operating on the poor in the hospitals for nothing. I grant that.

If the dentist charged $150 an hour for actual work, could you hear yourself speak, in the noise of voices raised in protest? But still you are supplying your advice, your office, the attendance, the anesthetic, when local, and sometimes general, the operating room, the instruments, the material, everything. We are not doing free operating, no, but we could if we got those fees.

We do not expect as high a fee per hour for continuous work, but we do want a minimum fee that will give every man operating, say, from five to seven hours a day, a good living for himself and those dependent on him, over and above his outlay in maintaining his office. This would give the young graduate a chance to start more easily. He is finding it harder and harder every day to pay for his equipment, and also obtain enough to live on independently. He would have a standard to base the value of his services on.

A medical man can make from $15 to $20 visiting or receiving patients in an hour, with no further expense than what I mentioned before in regard to the surgeon. Specialists in medicine and surgery are averaging more than that. Dental specialists are averaging more than the general operator. Why? I do not think they should, although they claim they are more proficient in their branch, and rightly so. If they are entitled to larger fees, why do not we all specialize?

I think that the average dentist would render better service, keep more up-to-date, and fit himself physically to do better work if he knew that he was getting a recognized and sufficient remuneration per hour spent at operating. A great many dentists allow themselves to look upon their services from the patients' standpoint, of so much an operation. They hurry their work to get through enough to satisfy the patient and still make enough to live on, and do not render the service they could.

We all allow ourselves to be imposed upon by our patients, more or less. Let me draw your attention to broken appointments for one thing. Personally, I charge for loss of time, unless sufficient notice is given to fill in the loss of time, or reasonable excuse, such as sickness. However, this sort of thing gives the office nurse much more telephoning and readjusting appointments, and I think in taking up the question of fees, this matter should be taken into consideration and a definite stand taken.

To return to how we shall render our fees. Let us take a case of extraction for an example, to bring about discussion, for I cannot cover all things in this paper, and I think it is the same in a great many other operations. Taken that the injection of the local anesthetic takes the same time for each case. I have had cases of extraction, varying in the time taken from several seconds to one hour and a half to two hours for one tooth, and in the prolonged cases, where some laceration occurs, subsequent treatment. Now, they are all the same in the opinion of most patients—it was just the extraction of one tooth. Are we to charge alike for them. Supposing we charge alike at $2 a tooth, and we get three difficult cases in one day, six hours of hard work, for it is hard work, and we get $6 for the six hours.

Plumbers are making that now, so perhaps we should be content.

Some men will say, "Oh, well, I will make it up on some other work." If he does, he is not doing right, for he is overcharging on the other work. I do not know how he reasons it out—he is probably too tired, after he gets through, both mentally and physically, to reason.

In dental offices it is often the case that the fee for the general anesthetic is more than the fee for the operation.

I cannot but reason that the general public will think more of us if we have a recognized standard of fees.

Before giving you my opinion in regard to the minimum fee I consider sufficient, let me give you a talk on fees I had with a business man not very long ago. I just started him off, and then let him do the figuring and reasoning from his standpoint. He said to me: "You know, my wife thinks you charged her too much for the work you did for her. How do you fix your charges?" "Well," I said, "Mr. Businessman, how much do you think I should earn per hour to give me a reasonable income?" "That is easy," he said. "How many hours a day do you work?" "Nine in the morning to six at night, one hour off for lunch." "Eight hours. How about holidays, sickness? Let us take Saturdays and Sundays, throughout the year; that would give you 104 days, 52 not counting Sundays; that leaves 261 working days, at 8 hours a day, 2,088 working hours. Let us say at $5 an hour, would give you a gross income of $10,440 for the year. What percentage are your overhead charges? Say 50 per cent., to include everything—bad debts, loss of time on appointments, accidents, such as failures on laboratory work or breakages, which could not be charged for, waste of time between patients, patients late, etc., and new equipment. That would give you a net income of $5,220, and it costs to live at least $4,000; that would leave you $1,220 for emergencies and investments, and even if your average investment were successful, you would not have enough to retire on in thirty years, or to leave your family independent. No," he said, "the least you can work for is $10 per hour, which would give you $14,067 net income. In this case taking overhead charges 30 per cent., as only bad debts and loss of time would increase by 5 per cent."

This was about a year ago, and since then the cost of living has gone still higher.

This conversation has, I must say, influenced me, as I think it will you, in drawing my conclusions.

I have thought it out, charging by operation and time spent, but from every standpoint I find myself taking into consideration the time spent.

I am convinced that the only way is to charge by the time spent plus laboratory material and labor. You can cover the expenses of overhead for your rental, attendance and supplies for operating room reasonably by one time charge, but the laboratory must have its own charge, for you may provide more material, such as gold and teeth and labor to one patient than you do to another.

I think the minimum fee here for dental services should be $10 per hour plus all laboratory labor and material. This would cover all advances in the price of labor, rental and supplies for a while at least, and if insufficient it could be adjusted later.

I would charge full fee for appointments broken unless at least 24 hours' notice was given. I would charge a patient for the time they were late for an appointment. Examination of the mouth or any professional advice given in the office should be charged for *pro rata* to the time spent.

House attendance from the time you left your office until you return. You must remember that any time given to a patient, even if not in actual work, could be used in giving services to another.

People can pay for it, and they must be made to learn the value of your services. You must have sufficient to live on and lay by. You must have sufficient to surround yourself both with the instruments to furnish them with the best services you are capable of, and you must keep yourself in good health to render that service.

In asking and giving estimates to patients of which you have had experience no doubt, you appreciate that perhaps you are at sea, just to figure out how much time and material you are going to use to get satisfactory results on just a superficial examination. In fact, you cannot give an estimate with justice to yourself. Let us stop this shopping habit that some people have.

The collection of fees is a most important question with us also. If we could co-operate and have a general understanding on this question, it would be of great benefit to us all. Say we agreed to render our accounts immediately on the first of the month after completion of the work, and monthly thereafter, or better still, render the account for work done at the first of the month even if the work was not completed. Your patient could be notified of this on starting work. And in regard to bad debts, we certainly ought to reach some understanding. There are a class of people who change from dentist to dentist without any intention of paying any one of them. This should be stopped. Financial black sheep could be spotted with some system. Business houses do this in their associations. Why not dentists?

Now, lastly, to finish this paper, a word to the man who is timid about raising his fees if the minimum is above what he is getting now. He may think his patients will all leave him and he will starve. He need not fear; there is plenty of work for all of us in this city; in fact, more than we can look after and give thorough service to. He will have some patients leave, no doubt, but he will get some who have left the other man, and if he has done his work well, his old patients will come back after they find the other man is charging the same. I have tried to make this as complete as possible, but I realize that there will be many points that I have left out. Let us get together as one family for the benefit of one another and come to some understanding.

Gentlemen, I thank you for your kind attention. It is now up to you. Let us have lots of discussion.

WHO IS EDUCATED?

A. E. WEBSTER, M.D., D.D.S., Toronto, Ont.

Delivered at Banquet, McGill University, March, 1920.

The fond parent who is unable to read or write though he has risen to some prominence in his occupation, thinks his son is educated as soon as he is able to decipher a letter or read a newspaper. By acquiring such skill the son is set apart and is forever in a different group of society. Among the so-called educated there are many groups or sets according to the particular subjects they have knowledge of. Those subjects which are of the least possible utility stand out as the most sought after, because a knowledge of them leaves the impression that while the person was young his parents did not need to think of the utilitarian—just the higher arts and the development of the soul. Only persons almost as low as the animal creation think of food or give time to the methods of acquiring it. There is a group of the so-called educated classes who would classify only those as educated who can read the classics. There are some who classify as educated those who have accumulated a great number of facts about any subject. The Editor of the University magazine says that the acquisition of facts or the ability to read and write does not necessarily mean education.

The late Superintendent of Education of the Province of Ontario sneered at the idea that the study of anything which was not of utility could have any educational value. Mr. Courtice, Director of Education in Detroit, says that much now taught is useless and all but the necessary should be eliminated. Much depends upon who is the judge as to whether a person is classified as educated or not.

Let the writer now intrude some observation on the subject being the product of no system of education. Having learned at home to read the first book and to make the figures and to identify the alphabet at the age of seven, he was sent to school for some purpose wholly unknown to him. After three years of public school education he had forgotten the alphabet and his ability to read but he had heard the higher classes in the school recite on the subjects of history, geography and arithmetic. He had whittled his desk and learned the art of making antique furniture as well as collected hundreds of weeds, flowers, herbs, moths and animals in season, and made enough machinery and toys to supply a store. The trip to and from school lay along a stream and through fields and where many workmen were employed which gave more entertainment than anything at school. The old schoolmaster finally forgot him and for months he played at his seat with the toys he made or the pictures he drew. At ten he was sent to another school where he had to learn to read and write. At this school many of the larger boys and girls attended during the winter, being from fourteen to eighteen years of age, they were permitted to specialize, choosing only those subjects of study which were essential in their calling. The girls never specialized. The subjects of special study were usually arithmetic, writing, reading (but not aloud). One boy being away from school all summer had forgotten how to do long division and concluded that he would not learn it again because, during the whole period of his absence, he had not needed it and naturally concluded it was useless. There was no need of learning to read aloud, as none of them intended to become teachers or preachers. Geography was useless as they had seen it studied (and dear knows it is even to this day). If they had seen a map of the township in which they lived, or the route of travel to the shanties where they intended to go the next winter, geography would not have been excluded as useless. History was even one worse than geography. Spelling was often a subject of study among such pupils because of the fun of the spelling match on Friday afternoon. The longer and the more obscure the words the better suited for the spelling match.

It is to be noted that parents, teachers and pupils agreed that specialization should begin even before the pupil could write correct English. Some of such pupils objected to doing questions in arithmetic which in future they would never need to know how to do, *e.g.*, at what time between three and four o'clock will the minute hand and the hour hand be together? All agreed that the usefulness of the information had first to be shown before the subject should be studied.

Later on in the writer's career a teacher made bold to state that geography, history and especially all the subjects studied in high schools and universities were in themselves useless. The only purpose they served was to make the mind more capable of dealing with new subjects. Mental exercises help just as throwing stones helps in learning how to throw a baseball.

At model and normal school there seemed to be two contending forces, as indicated above, one the utilitarian and the other the cultural. Subjects of study were all so classified. If a subject could be shown to be of no practical value, then it was cultural. If farmers' sons were taught how to make designs of castles, then it was culture; but if they made designs of hen pens, it was utilitarian. One trained the mind, the other did not. One made the designer fit company for intellectual persons, the other did not. There was no impulse of necessity behind the one, just the love of thinking or creating; while in the other there was the impulse of the value of the thing designed.

The governing bodies of universities, colleges, academies and schools are arguing these same general principles with the same positiveness and finality that the boy did who had forgotten how to do long division. Having now listened to the arguments pro and con for many years, and by the most learned and most uninformed from childhood to old age, one can safely say that there is only one particular in which they are all alike, that is positive, absolute assurance that only one side is right, no half measures. The man who cannot read the classics should neither be accepted within the halls of a college or university nor have any of the marks conferred upon him which might indicate that he had an education. Such marks are only for those who are willing to acquire a knowledge of dead languages just for the love of the mental training such a study gives. Culture is the residue of things forgotten. On the other hand, there are those in schools, colleges, universities and especially in professional technical schools who would exclude every subject from the curriculum which was not at once useful. Among dentists, and even among dental teachers, there are to be found those so-called practical men who can do many things well and rather pride themselves on their want of knowledge of the basal sciences. Such teachers are of little value to any staff. It is well to know how to do many things, but it is impossible to know everything, therefore the shortest way is often to teach a few general principles and develop an ability to devise methods to suit the occasion. It is said that the Canadian soldier was especially useful in certain critical places because he readily adapted himself to the conditions as he found them. This was because of having a trained mind, or broadly speaking, because he was educated. It is the ability to cope with the unfamiliar that every teacher should aim to develop. This may be done in the study of useful things almost as well as in the study of the useless.

At the meeting of the Institute of Dental Teachers recently held in Detroit, the general principles enunciated stood out prominently. Dr. Owery, Dean of the University of Minnesota, introduced the subject of the fifth year in dentistry. The curriculum suggested contained many subjects having nothing to do directly with dentistry—drawing, English, drill, language, biology, physics and chemistry filling the remainder of the curriculum. In presenting the need for a fifth year in dentistry, there was little defence of the curriculum on the ground of its direct necessity, but it was held that the subjects mentioned were the foundation of the study of medical science or public health. This led Dr. Owery to enlarge the curriculum and say that there must be at least two years after high school before entering dental college. His view is that the dentist must have a thorough knowledge of the foundational sciences. as the general practitioner, and also the special knowledge belonging to his own craft. In closing the discussion, he stated that the properly trained dentist will be capable of a complete study of his patient in relation to dental diseases, and associated with him will be other dentists, assistants, hygienists or mechanics who will carry out his directions. Anyone who has studied the tendencies in dentistry can see nothing else for it. It is a waste of time and money for a dentist to spend time polishing dentures, casting inlays or polishing teeth.

Dr. Thornton made a plea for the young men who would be excellent practitioners of dentistry, but would be debarred by such a long course. The time and cost of such a dental education was altogether too great to be undertaken by those of moderate means. If only dentistry were taught in dental colleges, four years is plenty of time for it.

Mr. Courtice, in discussion, said that the only proper way to teach dentistry was by the practice of it.

Dr. Wait gave the history of the pre-medical year as it worked out in medical education. When the university medical schools, and later the National Medical Faculties Association, agreed on a fifth year in medicine. the subjects of geology, biology, physics, chemistry were obligatory and enough optional subjects to make a school year. In the university school all the prescribed and optional subjects were given in the regular courses in science and arts, hence there was no difficulty, but in the so-called independent or proprietary medical schools there was neither equipment nor staff for such a course. The result was a hybrid course, some subjects, such as physics and chemistry, were taken with the first year medical students. The teacher of histology undertook the biology. Teachers of languages were obtained from the nearest high school or college. It was altogether a new course for the school management and faculty, and one in which they were not particularly interested. The proprietary school charged the full medical college fee, which was in the majority of cases at least double that charged in the arts and science departments of a regular university. The fifth or pre-medical year was soon found to be inadequate, and then a sixth year, or two pre-medical years, were added. This had the tendency to draw the students to the colleges and university for the pre-medical work, no matter where they went for their medical training. Dr. Wait said he went over the details in order that dentistry should not fall into the errors the medicals had just gone through. In all, this discussion approved that same old question of who is educated. There was no pretense that all the subjects taught in the pre-medical or dental courses had anything directly to do with medicine or dentistry.

In a recent statement issued by the University of the State of New York, it will be seen that dental schools will continue to give the professional training in four years, but a pre-college year covering certain obligatory subjects will be required on and after 1921, and that two years of such study will be required on and after 1926.

Thus it would appear that the best dental standards of the United States will require two years of college with certain obligatory and optional subjects and four years of dental college after graduation from high school. It is being made clear that dental schools which have been established for teaching dentistry will continue to do so, and not undertake modern languages, history, the classics or pure sciences. There are quite enough high schools, collegiates, academies, colleges and universities in the country with the equipment, staff and experience to do this work without burdening dental and medical schools with a task they are not fitted for.

FRACTURE OF THE LOWER JAW

J. Neelands, L.D.S., Lindsay.

It must have been fifty years ago, more or less, when the Midland Railway was extended from Lindsay to Beaverton. A young Englishman was felling a tree on the right of way when a limb struck him on the mouth and drove his four lower incisors back against his tongue, making a fracture in a line with the points of the roots of the four under incisors. A young medical man, Dr. Edward Benson, who was practicing in Lindsay at the time, had graduated in Toronto and taken a post course at Bellview College, New York, he afterward went to Winnipeg and practiced there until his death a few years ago. He called on the writer and requested him to go and see the young Englishman who had met with the accident. He was found in the condition described. There did not appear any practicable way of inserting metallic splints or ligatures. Gutta percha was used for taking partial impressions before the modelling impression compound was introduced. A few ounces of gutta percha was taken along and some hot water obtained in his boarding house and the gutta percha softened. The teeth and portion of fractured jaw were replaced in their natural position. The soft gutta percha was pressed down and held until fully set. Nothing more was done for some four or five weeks, when the doctor called and requested the writer to remove the gutta percha. When it was done there appeared to be a perfect union. The teeth were bright and clean and the gum over the fracture had a healthy and natural color. The writer never saw or heard of the patient afterwards, but presume the cure was permanent.

"PSEUDO-HEMOPHILIA"

Dr. H. B. Ness, Outlook, Sask.

In the "Dental Cosmos," July, 1919, Dr. L. R. Gans, New Haven, Conn., has reported an interesting case of hemorrhage after extraction which is very easily mistaken for hemophilia. Undoubtedly there may be many such cases occurring in dental operations, and the following case substantiates the views of the surgeon consulted by Dr. Gans.

On Feb. 2, 1920, I extracted three teeth for Mr. M——, age sixteen. A piece of the root was lying practically on the surface of the gum tissue and was removed with a foil carrier. Next morning the patient reported to me after a night of continuous bleeding. A considerable amount of fibrin had gathered about the remaining teeth and over the gums where the teeth had been extracted. After removing all loose fibrin, it was evident that the deep sockets were completely filled with normal blood clots and the hemorrhage came from the little wound on the gum where the root had been removed. There was no reason, therefore, to suspect a condition of hemophilia. With a curet I scraped out the spot where the hemorrhage persisted and waited for results. In less than four minutes' time the patient informed me that the bleeding had ceased.

In explaining the treatment I will repeat a portion of the article in the "Dental Cosmos" which I referred to above: "A vein in the surrounding tissue had been partially severed, whereas had the vein been completely severed the intima of the blood vessel and elastic tissue would have contracted and closed the lumen until normal healing had taken place."

DENTISTRY IN GREAT BRITAIN AS FOUND BY A COMMITTEE OF THE HOUSE OF COMMONS

CONCLUSION.

119. Local education authorities object to pay for the provision of dentists even if available, for the performance of the more routine work. We have had a good deal of evidence submitted to us on this question both from the point of view of the professional dentist and the school medical and dental service. School medical officers, such as Mr. Lewis Graham, of Birmingham; Dr. Barwise, of Derbyshire; and Dr. Wheatley, of Shropshire, were very strongly of opinion that the minor and routine work involved in dental inspection and treatment may be performed by specially trained dental dressers or assistants, provided that they work under the effective supervision of a dentist. The work was considered to be of a nature suitable for properly trained women. The only point in which there was any difference of opinion was in the nature of the supervision to be exercised. Dr. Robertson, medical officer of health of Birmingham, was in agreement with the school medical officers. On the other hand, Mr. Norman Ben-

nett, representing the British Dental Association, gave evidence against the employment of dental dressers in operative work such as teeth extraction and filling, and Mr. G. H. Watson was also against their appointment. Having regard to the great shortage of dentists, the question is a vital one if any progress worthy of the name is to be made in school dental treatment in the next few years. *The Education Act,* 1918, *must remain, for many years, practically a dead letter, so far as dental treatment is concerned, unless there is a great increase in dentists, or unless dental dressers are permitted to undertake minor work under the supervision of dentists.*

120. Having regard to the supreme importance of the national health, the Committee cannot accept as satisfactory a position which will in any way hinder the bringing into operation at the earliest practicable date of a complete system of school dental treatment. The health, and with it the industrial efficiency of the future adult population of the kingdom, largely depends on the preventive dental work which will be carried out in the schools in the immediate future. There cannot be an immediate increase in the number of dentists to the extent needed. We have gathered the opinion that many registered dentists view with disfavor the employment of a class of minor dental operators even when employed in public work under public dental officers, because under the present state of the law such a class might form a centre for the creation of large numbers of unregistered dental practitioners. The recommendations which we make in another part of the report should remove this objection.

The Committee are of opinion that suitably trained and competent dental dressers or nurses acting under the effective supervision of a dentist may be usefully and safely employed in school dental work.

121. Action in this direction will be in the public interest, will tend to relieve the shortage of dentists, while at the same time it will render the position of school dentists more acceptable to the profession, and probably lead to an increased remuneration being assigned to their posts. We think that the approval of the Board of Education of the persons to be employed as dental dressers, the nature of the work they shall perform, and of the arrangements for supervision by a registered dentist, should be necessary.

We attach importance to approval being given, as we understand is at present the case, in each individual instance rather than in the framing of general regulations to govern work of the character in question. A certain amount of operative dental work by dental dressers has already been performed without, so far as your Committee can ascertain, any sacrifice of the public interest, but they realize that this question is in an experimental stage and they would leave to the Board of Education a somewhat wide latitude as to the particular arrangements they should approve in any individual case.

122. We have had a considerable amount of evidence that a certain percentage of parents refuse to allow, or at all events do not encourage their children to receive the dental treatment advised by the school dentist. Perhaps the strongest expression of opinion we have received is contained in an interesting memorandum from Mr. Harold Murray, L.D.S., senior school dentist for the County of Surrey. Mr. Murray states:

"Great numbers of parents have never heard that a carious tooth can be filled and still greater numbers believe that fillings always 'fall out,' and are bound to 'cause trouble,' besides being nothing more than an obvious trick to fleece them. Their sole conception of dentistry is to leave their mouths alone unless intolerable pain drives them to extraction and, later on, to buy 'sets of teeth' if they can get them cheaply. All that, of course, means not dentistry but the lack of it.

My large experience in this kind of practice has shown me that, as a matter of national health, it will be necessary to capture the appreciation and understanding of these people, who constitute, say, eight-ninths of the total population rather than to look on the matter as one mainly of increasing the facilities and amount of qualified and reputable practice, and decreasing unqualified and bad practice. *Looking on dental work, as I do, as the most definitely preventive branch of the medical profession,* the impossibility (through their own refusal) of reaching so large a proportion of the people with *conservative* dentistry, becomes at once the salient feature of the situation."

Mr. G. Hills Watson in his experience of school dentistry in Leith informed us that a great many parents, both necessitous and non-necessitous, object to having their children's teeth treated.

123. On the other hand we have had evidence that this difficulty is a temporary one which tends to disappear when an efficient dental education propaganda is adopted. There is undoubtedly a growing disposition in many parts of the coun-

try for children to avail themselves of dental treatment. Mr. Lewis Graham informed us that at Birmingham a higher percentage of parents year by year permit their children to undergo treatment, and that at the present time they have only to send out notices offering treatment for parents to bring their children up. The parents do not now have to be seen by the dentist and told that treatment is necessary. To use Mr. Graham's expression, the education of the parents is progressing "tremendously."

Sir George Newman, in his series of annual reports to the Board of Education, has frequently referred to this difficulty, and mentioned the different educational methods which have been found useful in influencing the parents. Dentists, school nurse, and teacher have each in their respective spheres assisted.

Mr. W. H. Jones, in his report on the Cambridge Dental Clinic, mentions how confidence in the work of the clinic has reduced the percentage of refusals from 29.1 per cent. in 1908 to 12.7 per cent. in 1913. Your Committee refer further to this subject in the section dealing with the education of the public in the evils resulting from neglect of dental decay, but they believe that the expressions of opinion just quoted are more representative than the view of Mr. Murray as to conditions in the county of Surrey.

SECTION X. DENTAL TREATMENT UNDER THE NATIONAL INSURANCE ACT, 1911.

124. In the two preceding sections the provision of preventive dental treatment for the young has been considered, the ultimate object of such treatment being the preservation of health and the prevention of sickness in later life. Unfortunately, the present adult population, through past neglect has teeth which are in a state quite unfit for the purpose of mastication. This has resulted in a mass of sickness which has mainly to be treated under the provisions of the Insurance Act, 1911.

Unless Approved Societies are to continue to pay sickness benefit for much preventable illness it is essential that an effort should be made to deal with the teeth of adults as they exist at the present time. Dental treatment is one of a number of additional benefits which an approved society may provide for its members, if after valuation of its funds a surplus exists. The additional benefits mentioned in the schedule are very numerous, and the competition between dental benefit and other very desirable competitors is bound to be very keen if a society should be in the fortunate position of having a surplus after the first valuation.

125. One or two approved societies have, anticipating a satisfactory valuation, made arrangements for dental treatment of their members. The Domestic Workers Friendly Society was, we believe, the first to do this. The members of this Society can obtain conservative treatment free and artificial dentures at half cost. Societies in a weak financial position, a condition which applies especially to women's societies, will, however, be quite unable to provide dental benefit, and unless their members are able to obtain dental treatment in some other way will continue to have to pay large sums in sickness benefit, thus still further depleting their funds. More than this, in normal times only about half the adult population is insured. Any action by way of additional benefit could, therefore, even if complete, only affect about half the people who need dental treatment. The half remaining outside the Insurance Act comprises a majority of women, who suffer more from dental defects than men, and whose need is probably more pressing even than that of insured persons. The evidence of nearly all the witnesses we have heard, who have expressed an opinion, is that any scheme for dealing with the mass of dental neglect in adults should deal with the population as a whole and not be confined to insured persons.

126. In this connection your Committee have received the following resolution, which was passed unanimously at a meeting of the Executive Committee of the Association of Approved Societies, an association representing over 2,000,000 insured persons:

Resolution—

> "In view of the fact that much of the sickness for which Approved Societies are called upon to pay sickness benefit arises directly or indirectly from dental trouble, and of the report of the Chief Medical Officer to the Board of Education, that a very large proportion of children leaving school need dental treatment, this Association of Approved Societies considers it of the utmost importance that a Public Dental Service should be instituted in every locality, adequate treatment being available for all who need it, irrespective of their financial position."

A similar resolution has been sent to the Committee by the Association of Approved Societies' Secretaries.

The Committee deal with the question raised by this resolution in the section on the provision of a public dental service.

SECTION XI.—MISCELLANEOUS VOLUNTARY AIDS TO DENTAL TREATMENT.

127. *Hospital treatment.*—The dental hospitals afford a considerable amount of conservative treatment of the best kind. Unfortunately, the number of such hospitals is so few that the amount of work they are able to accomplish deals with but a small fraction of the dental disease awaiting treatment. They only exist in towns where there are dental schools, which are practically confined to towns having Universities. In general hospitals it is the exception to provide any treatment except extractions, with in many cases the provision of artificial dentures at a reduced price by means of the assistance of some local charitable organization.

128. *Other Charitable Organisations.*—Various charities afford aid in the provision of dental treatment. Among these are the Saturday and Sunday Hospital Funds, the Charity Organisation Society, Voluntary Aid Societies and the society known as the Ivory Cross. This last is a charitable organisation which aids the provision of dental treatment and artificial teeth. Early in the war its activities were mainly directed to assisting recruits in obtaining dentures. Latterly it has assisted expectant and nursing mothers and also discharged soldiers. The work done by these various societies is very useful, but it has formed but a very small contribution towards remedying the great mass of existing dental neglect.

129. *Public Dental Services of Registered Dentists.*—Conservative dental treatment means the expenditure of much time, and is, in consequence, expensive. Your Committee are of opinion that such treatment cannot be afforded by the working classes at the fees that are habitually charged. Registered dentists recognise this, and associations have been formed by them in some towns for the purpose of providing persons of limited incomes with dental treatment at a reduced scale of fees. The treatment provided is the best professional conservative treatment supplemented by the provision of artificial dentures when these are necessary. The war has impeded the development of activities in this direction, but so far as they have gone these public dental services set up by dentists have performed a valuable work. It is usual to have a fixed scale of fees and to confine the service to persons whose incomes are below a certain level, usually that fixed by the Insurance Act. The British Dental Association have encour-

aged the formation of associations of this type, and Mr. Norman Bennett has furnished the Committee with a list of associations. Some difficulty, however, appears to have been experienced in making their existence known among the classes they are intended to serve.

The most complete association of the kind in question which has been brought to our notice is the "Scottish Dentists' Association, Limited." The Association has supplied the Committee with a memorandum explaining in some detail its origin, constitution and operations, from which the following extracts have been taken.

> "In November, 1913, a number of dentists who were connected with the Dental Hospital established a Clinic in the Partick District of Glasgow for combating the activities of the unqualified practitioner. These gentlemen fitted up premises and guaranteed the necessary expenses of wages, rent, taxes and cost of material. The premises were opened in the evening and were staffed by the originators of the scheme who each gave attendance for two or three hours per night in rotation. The idea was spread and a second clinic was opened in similar circumstances in the South Side district of the city. A Central Association—The Glasgow and West of Scotland Dentists' Association—was formed to coordinate the work and on 9th April, 1914, The Scottish Dentists' Association, Ltd., which absorbed the earlier association, was incorporated after consultation with the Board of Trade.
>
> The Scottish Dentists' Association is a company limited by guarantee of its members and no profit is divisible among the members."
>
> "The initial funds amounting to £400 were subscribed by guarantee of members.
>
> The membership to-day is 142.
>
> The Clinics are fitted and furnished on a common plan and the premises include in each case a surgery, waiting room, and lady attendant's office.
>
> The evening being the most suitable time to get in touch with the class for whom the service is intended the rooms are open from 5 p.m. to 9 p.m. From 5 to 7 the attendant interviews the patients and makes appointments and from 7 to 9 the operators are in attendance.
>
> The present Clinics are open at 181, Crown Street, South Side, Glasgow, and 2, Cranston Place, Anderston, Glasgow, two of the most densely populated districts in the City. The

staff of operators consists of eleven dentists. Almost 4,000 patients have received treatment, but since the commencement of the war the natural development of the Association has been checked. Many of the operators are on active service. The shortage of dentists in the district made the hours of attendance a heavy tax on the dentists left, and the alteration of the hours of employment of patients, together with the lighting restrictions have all tended to check progress.

The Association is the only body at present carrying on this public dental service in Scotland, and the idea, which would have been persevered in but for the war, was to extend its operations throughout the Kingdom of Scotland."

"The scale of fees which are charged to patients are:

1. Extractions.	
(*a*) Without anæsthetic	6*d.*
(*b*) With local anæsthetic	1*s.*
(*c*) With gas 3*s.* 6*d.* and	1*s.*
2. Fillings.	
(*a*) Amalgam, &c.	3*s.* 6*d.*
(*b*) Sythethic porcelain	4*s.* 6*d.*
(*c*) Gold	£1 1*s.*
(*d*) Crowns	£1 1*s.* each.
(*e*) Inlays	£1 1*s.* "
3. Dentures.	
(*a*) Full upper or lower with extractions 5*s.* extra	£2 10*s.*
(*b*) Partial upper or lower	3*s.* 11*d.* p. tooth.
(*c*) Single tooth	5*s.*
(*d*) Remodels	£1; 3*s.* 6*d.* p. tooth.

"These fees compare very favourably with the amounts charged by unqualified persons and in addition the highest dental skill is available to the patient."

Mr. Towart referred to the work of the association in Glasgow, and we gathered that owing mainly to the fact that the Association is unable to advertise, the success of the Glasgow branches has not been as great as could be desired.

In Dundee a dental service in close association with the local dental hospital has been inaugurated.

130. *United Dental Service of the Incorporated Dental Society.*—Certain members of the Incorporated Dental Society before the outbreak of war formed a company under which treatment was given to the necessitous poor at a recognised

scale of fees. We have formed the opinion, however, that like the public dental services set up by registered dentists this somewhat similar organisation of unregistered practitioners has not been able to make much impression on the mass of dental disease needing treatment or in reducing the mass of dental work performed by undesirable practitioners who canvass from house to house. We mention this particular organisation here as it clearly indicates that in the opinion of the most representative association of unregistered practitioners some form of public dental service is necessary.

SECTION XII.—A PUBLIC DENTAL SERVICE

131. In the preceding sections the public dental assistance that has been provided, or is in course of being provided by local authorities assisted by grants from the public exchequer has been outlined.

Briefly it is as follows:

1. For children under 5, not in attendance at school, through child welfare centres aided by grants from the Local Government Board.
2. For children in attendance at elementary schools, by local education authorities aided by grants from the Board of Education.
3. For expectant and nursing mothers, through maternity centres aided by grants from the Local Government Board.
4. For persons suffering from tuberculosis, by County Borough Councils and County Councils aided by grants from the Local Government Board.

132. Under the provisions of the Education Act of this year this dental assistance will be supplemented by dental treatment which local education authorities may provide for children under 5 or 6 years of age who are attending nursery schools, and also for children and young persons who after leaving the public elementary school may attend a continuation school, secondary school or other institution up to the age of 18.

133. Broadly speaking the State has undertaken, with the assistance of local authorities, to aid the dental treatment of the child and school population up to the date when the scholar ceases to attend school. For the adult population the State, so far, has only undertaken to assist selected sections of the population.

134. In considering our terms of reference we have been

obliged to endeavour to forecast in what direction public dental treatment is likely to be increased in the future, as the provision in adequate numbers of an instructed and trained dental profession sufficient to meet the requirements of such treatment will be essential. Witnesses before the Committee have in various ways coupled with the prohibition of dental practice by unregistered practitioners the provision of a public dental service. We, therefore, have found it necessary to express our views on the subject of the provision of a public dental service.

135. *If it be accepted that it is the duty of the State to ensure in the national interest that its citizens shall be maintained in a state of good health and working efficiency we have no hesitation in stating that adequate arrangements for keeping the teeth of the people in a sound condition are one of the essentials to this end.*

There is no doubt from the evidence submitted to us that, provided an adequate and periodical dental inspection supplemented by conservative treatment of the teeth of the people could be ensured, the gain to the community both in improved health and in increased efficiency in labour, both manual and mental, would be very great.

136. We consider the question under two heads:

(1) Treatment to ensure the sound condition of the teeth of future adullts.

(2) Treatment of the teeth of adults.

(1) TREATMENT TO INSURE THE SOUND CONDITION OF THE TEETH OF FUTURE ADULTS.

137. To achieve this result a beginning ought to be made at the beginning. As we have shown in Section VIII, the provision of dental advice and treatment for young children is now possible in connection with the Maternity and Child Welfare centres which are now in process of being established and developed by local authorities throughout Great Britain with the assistance of State grants administered by the Local Government Board and the Local Government Board for Scotland. The attendance of mothers with their young children at these centres is rapidly increasing.

Having regard to the evidence before us as to the condition of the teeth of children on entering on school life, we are of opinion that the extension on a large scale of dental inspection and treatment to children in the pre-school period of life constitutes a most important part of a general system of preventive dental treatment.

Adequate card records should be kept of the dental condition of each child with a note of the treatment which it has undergone. These cards should be available for the use of the School Medical Officer when the child enters school.

138. In future, by the natural development of the school dental service, every child in attendance at a school aided by the State will, if the requirements of the Education Act, 1918, are met, come automatically under dental inspection, and, in the case of children in attendance at Public Elementary Schools, under treatment. The foundations of a satisfactory school dental inspection and treatment have already been laid, and it is only necessary that this inspection and treatment should be developed to its normal completion for every child to leave school with its teeth in sound dental condition. *The ideal to be aimed at is to inspect and treat the child early after its admission to school, to keep the child under such periodical inspection and treatment as may be necessary, and finally to send the child out on its life's work with its teeth in good condition.* Nearly every witness we have heard has emphasised the need for a full development of the school dental service. The necessity for this has been particularly strongly emphasised by Mr. W. C. Anderson, M.P.

139. Professional witnesses, with the striking exception of Dr. Jenkins, of Rhondda, were in the main agreed that although an adequate school dental service would require in the present an increased supply of dentists, nevertheless, owing to the improved condition of the teeth of the people which would result, the necessity for dental treatment in later years would be diminished. Dr. Jenkins, in reply to a question, stated:

> "Where young people are now supplied with artificial dentures it means that the dental attention required for the rest of their lives will not be quite so great probably as it would be in the case of natural teeth, which would very often require attention. That is my own experience and the experience of others."

Mr. Sidney Webb, regarding this question from a somewhat different angle, was of opinion that probably the higher standard of dentistry that the public would demand in the future would prevent any effective saving in dentists. He stated:

> "I do not think you can regard as a net saving of dentistry the lessened need that you may possibly make by conservative dentistry up to 18, because, against that you have

to put the higher standard that will be required, and you will want a great many more dentists."

140. The broad general effect of a satisfactory system of school medical inspection and treatment will be to increase the demand for conservative dentistry and to diminish the demand for extractions and artificial dentures. We have strongly expressed our approval of a system of dental dressers in school dental work under competent supervision. This should lead to a considerable saving in the time of school dentists. While we are in complete agreement with the Board of Education that the inspection and treatment of entrants into school life is the most pressing portion of school dental work, we nevertheless are of opinion that *every effort should be made to ensure that no child or young person leaves the control of the local education authority without its teeth being examined and treated if necessary.* We attach great importance to such treatment, and we should like to see established a system under which a school dentist would furnish to a child or young person leaving school a certificate that the teeth had been examined on a given date and any dental treatment required executed. In the section on educational instruction of the public in dental matters we deal further with the uses to which such a certificate could be put.

With comparatively few exceptions every child has to attend school, so that an opportunity occurs, and occurs in this service only, of bringing nearly every member of the population of a definite age group under treatment.

(2) TREATMENT OF THE TEETH OF ADULTS.

141. It will have been gathered from previous sections that the teeth of the adult population have been greatly neglected, and that the national health is suffering from such neglect. This implies among other results that insurance funds are being spent, and a large mass of chronic invalidity has resulted from this neglect. Among the causes of this neglect, undoubtedly, in certain sections of the community, the high cost of conservative treatment takes a very prominent place.

Satisfactory conservative treatment of the teeth of the present adult population is not possible, owing to this past neglect. A large amount of dental work is, however, needed for extractions and the provisions of dentures.

142. *The provision of an adequate dental service to meet the existing needs is impossible at present owing to the shortage of dentists, but your Committee are strongly of opinion*

that simultaneously with the enforcement of prohibition of unqualified practice, the nucleus of a public dental service should be set up in populous areas for the treatment of dental disease, and that dental treatment by such a service should be available for persons needing it free of charge. We think that the service should be established as a definite branch of public health work and should be entrusted to public health authorities. The dental clinic or other service provided should work under the general direction of the Medical Officer of Health and the Public Health Committee of the local authority. We look forward to close co-operation between the local education authority and the public health authority in providing for the dental needs of the public. In order to prevent overlapping, and to facilitate co-operation, we think there would be advantage in limiting the public health authorities to those authorities whose districts are coterminous with Local Education Authorities under Part III. of the Education Act, 1902, i.e., the Councils of Administrative Counties, County Boroughs, Boroughs with a population exceeding 10,000, and Urban Districts with a population exceeding 20,000 in 1891.

As the Medical Officer of Health of such areas is usually the School Medical Officer every facility will exist for establishing the closest possible co-operation including, usually, common action between the School Dental Service and the Public Dental Service.

ONTARIO DENTAL SOCIETY

Toronto, April 15th, 1920.

DEAR DOCTOR:

For some months past the Department of Education, assisted by the dentists of the Province, has been conducting a most satisfactory dental survey. This inspection has revealed the fact that school children's teeth are in a most deplorable condition. We believe that the time has now arrived when a most determined effort should be made to have permanent systems of dental inspection and treatment established in all the inspectorates of the Province. We are urging the dentists to assist in this undertaking by getting in touch with their local school or municipal authorities and asking them to write to the Hon. R. H. Grant, Minister of Education, and request him to have the Provincial Dental Officer sent to the local Board or Council and present the need for such a system.

The Minister, upon request, will send the Dental Officer to arrange a survey, give an estimate of the approximate cost, or address a public meeting.

Kindly have some representative person write to the Hon. Mr. Grant immediately, so that this may be arranged. It will give an opportunity for the arranging of interviews or public meetings to permit the Provincial Dental Officer to fully present the need of a dental service in your community.

All communications regarding school dental services or public meetings on their behalf, should be addressed direct to The Hon. the Minister of Education for Ontario, Toronto.

Yours faithfully,

H. E. EATON,
President Oral Hygiene Committee.

Editorial

EDITOR:

A. E. Webster, M.D., D.D.S., L.D.S., Toronto, Canada.

ASSOCIATE EDITORS:

ONTARIO—M. F. Cross, L.D.S., D.D.S., Ottawa. Carl E. Klotz, L.D.S., St. Catharines.

QUEBEC—Eudore Debeau, L.D.S., D.D.S., 396 St. Denis Street, Montreal; Stanley Burns, D.D.S., L.D.S., 750 St. Catherine Street, Montreal; A. W. Thornton, D.D.S., L.D.S., McGill University, Montreal.

ALBERTA—H. F. Whitaker, D.D.S., L.D.S., Edmonton.

NEW BRUNSWICK—Jas. M. Magee, L.D.S., D.D.S., St. John.

NOVA SCOTIA—Frank Woodbury, L.D.S., D.D.S., Halifax.

SASKATCHEWAN—W. D. Cowan, L.D.S., Regina.

PRINCE EDWARD ISLAND—J. S. Bagnall, D.D.S., L.D.S., Charlottetown.

MANITOBA—M. H. Garvin, D.D.S., L.D.S., Winnipeg.

BRITISH COLUMBIA—H. T. Minogue, D.D.S., L.D.S., Vancouver..

VOL. XXXII. TORONTO, APRIL 15, 1920. No. 4.

ORAL HYGIENE COMMITTEE—ONTARIO DENTAL SOCIETY

The Oral Hygiene Committee of the Ontario Dental Society gave a banquet to the public school inspectors of the province with the object of bringing them into closer association with dental inspection of the school children's teeth. Dr. F. J. Conboy, chief dental officer of the Department of Education, spoke of the province-wide examinations of the children, in which 350 dentists were taking part without cost to the state. One hundred thousand children's mouths have already been examined, showing fully 95 per cent. with defective teeth. About sixty per cent. have already made arrangements to have the defects repaired. Some of the inspectors have been examining the teeth of suffering children so that they might be persuaded to get dental treatment.

EIGHTY PER CENT. OF THE PEOPLE DEPRIVED OF A NECESSITY

About fifteen per cent. of the people of America use a toothbrush, and about twenty per cent. visit a dentist. Has anybody solved the reason for the low percentage in each case? After almost a hundred years of independent dentistry, is this the value the public put on dental services? It is admitted that 90 to 95 per cent. of the people require it, and only 20 per cent. accept it. When dentists get together, they talk, or rather dream, that dentistry is a necessity, not a luxury, and yet only twenty per cent. of the people get the necessity. Eighty per cent. of the people are deprived of a necessity. Why? It would be a good idea for someone to begin to do some thinking.

Editorial Notes

Dr. A. Stone, R.C.D.S., 1919, has begun practice in Ottawa.

⁂

Belleville is having a dental survey of the children's teeth.

⁂

Dr. G. N. Stults has opened a dental office in St. Paul Bldg., Halifax.

⁂

Phillips and Taylor have opened a dental laboratory in Kingston.

⁂

The Ontario press is doing wonders in presenting the value of dentistry to the public.

⁂

Messrs. Watkins and Doyle have opened a dental laboratory in Charlottetown, P.E.I.

⁂

Dr. Charles A. Martin, the oldest dentist in Ottawa, died April 7th, 1920.

⁂

Edmonton is considering appointing additional dentists to the school inspection staff.

⁂

Dr. W. Revell, Windsor, Ontario, has been elected president of the Essex County Dental Association.

Dr. Baker, who is in charge of the game laws of British Columbia, came under criticism by Mr. Bowser.

⁂

Dr. R. H. Atkey, after serving in the army for three years, has begun private practice in St. Catharines, Ont.

⁂

Col. E. B. Busteed, Montreal, died March 15th following what is reported as a minor dental operation.

⁂

Dr. C. E. Biehn, Chesley, Ont., has been appointed dentist-surgeon for the public schools of Windsor, Ontario.

⁂

Dr. R. McLean lectured to the parents and children of Queen Street School, Welland, Ont., on the care of the teeth.

⁂

Mr. Larry Martin, son of Oliver Martin, Ottawa, has been elected president of 'Varsity Veterans' Association, Toronto.

⁂

Moose Jaw dental officers: President, J. E. Rundle; vice-president, A. L. Johnson; secretary-treasurer, Harold Johnston.

⁂

The Dental Research Committee of Toronto has got well under way and holding weekly conferences as the collections progress.

⁂

The Canadian Dental Association will meet in Ottawa, August 17, 18, 19, 20, 1920. A very excellent program is already prepared.

⁂

Officers of the Regina Dental Society: W. J. Mooney, president; R. N. Grant, vice-president; A. Gregory Smith, secretary-treasurer.

⁂

Dr. John W. Turner, who has been in the military service in St. Catharines, will resume private practice in Niagara Falls, Ont., April 15th.

⁂

The dentists of New Glasgow, N.S., have undertaken the care of the teeth of the poor of their city. The High School Board has supplied the building and plumbing.

⁂

The Australian Government is preparing a history of the efforts of the dental profession in the great war. What is being done in Canada in this matter? The civilian dentist in Canada knows nothing of military dentistry, and seems to have little interest or influence.

The "New York Medical Journal," in an editorial, gets off some dental wisdom on the toothbrush which, to speak politely, is all bosh. It says the toothbrush is unscientific because, when once decay is begun in a tooth, the infection is carried from that spot to another tooth by the brush going back and forth in the act of brushing. As if the saliva or the food in mastication could not spread the infection, or as if acid-producing organisms were ever absent in the human mouth. Upon the same reasoning, it is unscientific to attempt to cleanse the hands in water by rubbing one against the other. Infection is always present.

❧

After a long and bitter fight in the Quebec Legislature, the sections of the by-laws of the Dental Act relating to the prohibition of advertising were withdrawn, but that part of the Act relating to the power the Dental Council has to govern such matters remains intact. It is for the Council now to draw up new by-laws which will control the situation in a manner suitable to the Legislature. From all that has appeared in the press, the public is led to believe that the Council has lost all its powers to control improper advertising among dentists, which is not the case. It is a matter of re-drafting the by-laws to suit the new conditions.

MANITOBA DENTAL ASSOCIATION
PRESIDENT'S ADDRESS
JAN. 12, 1920

G. F. Bush, D.D.S., L.D.S., Winnipeg.

My Dear Friends:

It is saying a great deal for the fraternal and kindly spirit of the members of the dental profession in Manitoba when I can stand before this gathering here to-night and count you all as friends. It seems rather strange to be before you again as president after having done so so many times before, and having retired from the board of directors for three or four years, I am back again, and will do my utmost to carry out your wishes and keep the good work going.

The hand of death has called one of our members during the past year, Dr. Allan Weagant, whose active interest and gentlemanly ways will be missed at our meetings.

All of our members who went overseas are now returned with the exception of those whose lot it was to return no more. In the name of this Association I extend a hearty welcome to you who have returned, and let us think with reverence of those of our number who gave their lives in the service of their country.

The next year or two will be most important ones in the history of dentistry, especially in this part of the world. We will have to face a period of reconstruction generally, and our own chosen calling must bear its share in that reconstruction.

I am convinced that, if not immediately, at any rate in the very near future, we must take steps to become a department of the University. We have plenty of men well qualified to teach the various branches of dentistry, and it seems to me a pity that we should force our students to go away from home and home influence, with all that that means, in order to get instruction which could be imparted to them here. In any case, a series of lectures could be inaugurated which would be of inestimable value to our students at very little, or no cost, to this Association.

I will not keep you any longer, as there is much to be done this evening, but cannot let this opportunity pass without mentioning the careful and conscientious work done by the members of your board this last year. Dr. Greenfield, as vice-president, has been a tower of strength. Dr. Banning has been one of the most painstaking and efficient secretaries we have had; while our registrar treasurer, Dr. Christie, has a decided genius for collecting and safeguarding the funds, as his report will show.

Gentlemen, I thank you.

ONTARIO DENTAL SOCIETY FIFTY-THIRD ANNUAL CONVENTION, MAY 3, 4, 5, 6, 1920

Toronto, April 15th, 1920.

Dear Doctor:

There are three strong and cogent reasons why you should not miss attendance at the Convention this year. First—The Convention itself is this year far above the best and most educative meet of dentists ever held on the North American continent. Second—The good old R.C.D.S. at its formal re-opening is staging some remarkable chair clinic for your instruction and benefit. Third—The public, your public, is insisting that its professional servants employ only the best, most painless, and modern methods; and we believe that you can obtain first-hand instruction and training in modern practice in no easier manner than by attending this year's annual Convention.

For the first time, the Royal College of Dental Surgeons of Ontario is actively co-operating with us in making this a high record year. On the closing day of the Convention, the College will conduct a series of chair clinics which will illustrate many of the principles taught during the Convention; and in addition, there will be a complimentary supper and reception in the evening.

Progressive clinics will again be a strong feature of the Convention. The Hamilton and Detroit Clinic Clubs will put on special clinics; and a new feature will be a clinic on conductive anaesthesia and oral surgery by the Dental Educational Association.

Dr. Paul Stillman of New York, Dr. J. Oppie McCall of Buffalo, and Dr. Harold Box of Toronto, will collaborate in the presentation of a symposium upon the vital problems of dental periclasia. Both lectures and clinics will be given, and the subject presented in a thoroughly scientific and practical manner by these three specialists who have gained a high reputation as members of Columbia University's Post-Graduate Faculty.

We are sure that no dentist can afford to miss the Convention this year. It has many new features and provides a real dental education. You will surely want to gather with your fellows at the formal opening of the new College building. Kill two birds with one stone: get the very necessary post-graduate training only to be had at the annual Convention; and have a real old-fashioned reunion at the good old R.C.D.S.

Yours faithfully,

C. E. Brooks,
J. P. Maclachlan,
Publicity Committee.

FOR SALE—Good dental practice in live city in Manitoba. Large rooms, good light, cheap rent. In best location in the city. Reason for selling enquire of the Temple-Pattison Co., Toronto or Winnipeg.

Dominion
Dental Journal

Vol. XXXII. TORONTO, MAY 15, 1920. No. 5.

Original Communications

PRESIDENT'S ADDRESS

J. A. Bothwell, D.D.S., Stratford, Ont.

Delivered before Ontario Dental Association, May, 1920.

Probably never in the history of this association have we faced greater problems or had greater responsibilities thrust on us than at the time of this, the fifty-third anniversary.

The world war is over, peace has been signed, but the war has made many changes. We are faced with the problems of reconstruction and of adaptation to the new order of things.

Dentistry is in the spot-light as it never was before. Advances in science and mechanics are revolutionizing operative and prosthetic dentistry to a marked degree. We may have had cause in the past for the complaint that our profession did not receive the recognition which it deserved. The war has assisted to some degree in bringing about a change. It has proven to the public and to our governing bodies the importance of dental services. And let me here say that the profession and the public in general owe much to the men who volunteered their services at a great personal loss. There were many who sacrificed large practices that they might be of help to their fellows who were battling for our safety and the cause of humanity. Recent discoveries as a result of dental and medical research have aroused the members of the medical profession to the far-reaching effects on the general system of an unhealthy condition of the dental organs. And to-day it is a common occurrence for the dental practitioner to be invited to a consultation in the effort to diagnose the cause of some obscure malady.

This should not be a reason for self-satisfaction, however, but rather a cause for self-examination. Are we prepared? Can we maintain the position attained? We are on trial and it is for us to prove we are worthy of the trust reposed. It will not do that it be left, however, for a few of the leaders in our profession to acquit themselves, but on you, Mr. Dentist, no matter in what obscure part of the province you may be located, depends to some degree the good report of the profession. And this opens up the question "Is our College fulfilling its whole duty to its graduates when it turns them out equipped to begin the practice of dentistry?" As we have stated advances have been made and are being made. Should it be any part of the responsibility of the College to see that its graduates are kept up to date? Dr. R. D. Thornton in an address to the Faculty of the R.C.D.S., has outlined a programme for College extension work that might prove worthy of consideration. The profession will be judged largely by the standard of the average practitioner. Any method that will help to raise that standard will be of service to the profession and to the public.

There are many new things related to the prevention and cure of disease that are to-day only partially understood. We cannot stand still. We must advance or recede. Dr. Chas. H. Mayo of Rochester, Minn., is reported as saying: "It was evident that the next great step in medical progress in the line of preventive medicine should be made by dentists," and he added, "Will they do it?" The busy practitioner has little time for research work. In every body of men some will usually be found to be particularly adapted for this kind of work. An equipment for this costs much and besides the men must be sustained while carrying on the work. Would this not be a worthy outlet for the money of some of our wealthy citizens? To what more noble purpose could they devote a portion of their wealth? But apart from that it is well that we, as dental practitioners, take some stock in this enterprise. I am pleased that a fund has been started for this purpose and I believe to each one of you has been extended the privilege of becoming a contributor.

I believe that in the near future the greatest advancement in dentistry will be along the lines of prevention. Heretofore our time has very largely been spent in repairing damage that has occurred to the dental organs and for some time, perhaps for all time, a measure of this must necessarily continue. It has been said that if you wish to correct some fault in a boy you must needs begin with his grandparents. So if you wish succeeding generations to have perfect teeth and healthy mouths, the method of obtaining that desired goal will be through the boys and girls of to-day.

Their mouths must be put into a proper hygienic condition. They should be taught the reasons for such and instructed in the methods used for attaining and maintaining that result. This we believe can best be accomplished through the medium of the schools.

Our legislators are awakened to the necessity and the public is ready for the innovation. Already a provincial dental inspector has been appointed and a good start made. It was fortunate that a man so well qualified in every way for the work as Dr. Fred Conboy was secured. As a result of his energy and the co-operation of the rank and file of the profession, much valuable information has been secured for the use of the Government. We hope the time is not far distant when dental inspection in the schools of this province will be an established fact and that such provision be made that no boy or girl in this fair province of ours need start life with a handicap through oral defects.

Probably the majority of those present have during the last few months had the privilege of inspecting in the schools. You have been amazed at the work to be overtaken.

Our neighbors to the south of us, having seen the need, have begun the training of young women as dental hygienists. Working in the schools, these could do a vast amount of good along the lines of prevention. They would be in a position to help hundreds and thousands of children who would never visit a dentist until compelled by pain to do so. We should not be fearful that our field may be encroached upon, or that our livelihood may be endangered. Whatever is for the public good is the aim of every true citizen.

And now before I close I would like to pay a tribute to a friend who has gone before. During the closing hours of our last convention there passed away at the General Hospital in this city one who was highly respected by many here. I refer to our teacher and friend, the late Dr. Luke Teskey. Dr. Teskey was the last of the three originals to go. A man intensely interested in his work and a man of broad sympathies, he endeared himself to all with whom he associated.

The Programme Committee have endeavored to furnish an interesting and instructive programme and we feel sure that when you return to your homes you will have the conviction that your time has been well spent.

I thank you.

EARLY CLINICAL MANIFESTATIONS OF TRAUMATIC OCCLUSION

PAUL R. STILLMAN, D.D.S., New York City.

Read before Ontario Dental Association, May, 1920.

The recognition of incipient symptoms of dental periclasia, depends first upon a knowledge and a definite mental picture of the normal mouth. The average dentist seldom is privileged to see a normal mouth. But certain characteristics of the healthy periodontium are familiar to all, if we will but call them to mind. The lustrous translucency of the entire gingival structure, the stippled pink coloration and the thin firm marginal gingiva, go to make up this picture. Departures from the normal are found as a color-change to either a lighter or darker pink, or atrophy or hypertrophy of these structures. Any of these changes, no matter how slight, are to be regarded as an indication of a pathological condition.

The marginal gingiva is that portion of the gingival tissue which is not attached directly to the tooth surface. The first indications of pathological change are most commonly exhibited in this tissue. These phenomena have constituted a misleading element in the study of periodontal etiology. In seeking the cause of a disease process it would seem natural to look for an irritant acting directly upon the tissue involved. And when the investigator sees a deposit of calculus or the edge of a filling in contact with tissue which is exhibiting an inflammatory reaction, he naturally assumes that this material is the source of the irritation. The study of these lesions and of their etiology has revealed the fact, one of the most important causative agencies in periclasia, viz., traumatic occlusion, frequently produces the first signs of its injurious influence in the marginal gingiva, a tissue apparently remote from the site of the injury.

Occlusion is the relation of the opposing inclined planes of the teeth when the jaws are closed. When they are closed in a position of rest, the relation is known as centric occlusion. When the teeth are brought together in any of the excursive positions of the mandible, the relationship is then known as eccentric occlusion. The closing of the jaws, whether in the act of mastication or otherwise, results in the application of a varying degree of occlusal force to the teeth. Each tooth in the normal mouth is provided with an amount of alveolar support adequate to sustain the occlusal stress normal to that tooth. When this occlusal stress is in excess of the normal, a condition of trauma is introduced which will result in one of two things. Either nature will provide an increased alveolar support, a condition revealed in the radiograph as a condensing osteitis, or, a breaking down of the supporting tissues will take place. Unfortunately the tendencies of civilization are toward more frail alveolar structures, the consequence being a corresponding tendency toward degeneration.

Traumatic occlusion may be defined as an abnormal occlusal stress which is capable of producing, or has produced, an injury to the periodontium. It must be understood to be either a potential or an actual injurious agent. In other words there may exist an inco-ordination of the teeth which has not at the time of observation produced any tissue change, such a relationship may be termed a potential traumatic occlusion. If a tissue change has taken place, the causitive agency will be known as an actual traumatic occlusion. Needless to say, a potential traumatic occlusion may become an actual injurious agent, depending upon the introduction and interaction of collateral factors.

This may be illustrated by the phenomena which follow the throwing down of a burning match. On a clean hardwood floor, a flaming match would do no damage, and in this case is a potential destructive agent only. On a floor covered with inflammable debris, the lighted match becomes an actual agent of destruction, and produces a conflagration unless it is extinguished. As applied to conditions in the mouth, the debris in our illustration will be represented by concretions on the tooth surface, lowered tissue vitality, bacterial masses and other secondary etiological factors.

Occlusal stress, whether normal or abnormal, is directed upon the crown of the tooth and is transmitted by the tooth to the pericementum and alveolar process. Since this stress is seldom directly in line with the long axis of the tooth, it follows that occlusal stress is unevenly distributed through these structures. In other words, the bulk of the stress is directed against some one point in the tooth socket. In the upper anterior teeth for instance, this point is the labial alveolar crest.

In this region, a traumatic occlusion produces an excessive pressure against this portion of the alveolar process and at the same time it causes an undue compression of the pericementum. This results in a circulatory disturbance, whose first visible effects are to be observed in the marginal gingiva.

This disturbance will bring about, either an ischemia or hyperemia according to the reaction to injury set up in the tissues. This reaction varies according to the nature of the associated injurious agents.

When the tendency is toward ischemia, which is a localized anemia, the gingival disturbance results in a pale coloration, the formation of a crescent-shaped festoon directly above the marginal gingiva, and usually a recession of this tissue. Also a departure from an even and symmetrical parabolic curve of the marginal gingiva is an indication, not only of a pathological condition, but of traumatic occlusion as the predominating factor in its production. Another indication of the presence of occlusal trauma, which may or may not occur coincidentally with the formation of a festoon, is the presence of a cleft in the marginal gingiva similar to the cleft occurring in the condition known as harelip.

When the pathological tendency is toward a hyperemic condition, the clinical picture is that of an inflammation. There is redness and swelling of the marginal gingiva. The crest of the gingiva, instead of presenting a knife edge, is blunt and rounded. The common type of gingivitis presents these characteristics. There is a sharp line of demarcation in the coloration of the marginal gingiva, distinguishing it from the cemental and alveolar gingiva. When traumatic occlusion is present as a factor, there is a tendency toward recession, due to the absorption of the crest of the alveolar process.

In the early stages of disturbances set up by traumatic occlusion, the radiograph furnishes but little diagnostic aid. Occasionally the absorption of the labial or buccal alveolar crest may be noted. But condensing osteitis, or absorption of the inner wall of the alveolus, is always preceded by clinical manifestations observable in the mouth.

Other color changes are brought about as a result of venous enlargement. The first is observed as a red linear area lying between the roots and parallel to their long axis. This area is ordinarily confined to the alveolar gingiva. The other type is observable chiefly in the lower anterior region. It consists of the enlargement of individual veins which lie just beneath the epithelium. These vessels simulate in miniature the varicose veins observed in other parts of the body.

The hypertrophic type of gingivitis may occur as a result of occlusal trauma, or the presence of serumal calculus. In the former case, there is a tendency toward the production of an epulis. And in fact epulis in its incipiency is nothing more nor less than a hypertropic gingivitis.

Whether or not it develops into a malignant tumor, will depend upon the interaction of the various etiological factors and also the manner in which it is treated in its early stages. In any case of hypertrophic gingivitis, traumatic occlusion may be a factor.

One of the earliest clinical signs of traumatic occlusion is a blanching of the marginal and cemental gingiva, when force is applied in the occlusal relation. The gingival tissue may be practically normal in color and contour; the tooth may have no perceptible mobility, yet the application of any considerable occlusal pressure will bring about this blanching above the affected tooth, while the tissue about its neighbor will retain its normal color providing its occlusion is normal.

In the molar region there is frequently observed a slight recession, together with a decided thickening of the marginal and cemental gingiva. Usually there is a very slight redness, and often the color is practically normal. This is an almost invariable indication of traumatic occlusion.

Slight mobility of the tooth in its socket may occur as a result of occlusal trauma without any other perceptible symptoms.

All of the foregoing manifestations are to be found in mouths whose alveolar process is inadequate to support the stress which is brought to bear upon it. When the alveolar process is more bulky, disturbance of the gingival tissues is less marked, and may even appear to be absent. In these cases the excessive stress of occlusal trauma is made manifest in the periapical region. The result then is a pulp disturbance. This may present symptoms of pulpitis which will be identified as originating in the affected tooth. Frequently, however, the pulp irritation manifests itself as a reflex pain which is often referred to the ear or to the ramus of the mandible.

The deep irritation of a traumatic occlusion may also set up a deep cellulitis, which, particularly in the upper bicuspid region, may extend to the floor of the orbit and involve the maxillary sinus. In a case of maxillary sinusitis the presence of traumatic occlusion which was the original injurious agent, is frequently overlooked. The result of this oversight may result in a chronic sinusitis.

Whenever any abnormality of the supporting structures of the teeth is observed, or when pulpitis or other deep lesions are found, it is of the first importance that a careful differential diagnosis be made and the presence of traumatic occlusion be excluded as a potential injurious agent. Failing in this, even where other factors may be present, treatment will be a disappointment.

When the burden of irritation is completely lifted from the organism the response of Nature is immediate and adequate. The most marvelous thing in Nature is her recuperative power. Only the moribund patient is lacking in the power of repair. All that is necessary is a knowledge of pathogenic forces and a valuation as to whether human skill can remove them. Given this knowledge, and the ability to satisfy its demands, the response of Nature is invariable.

Many of these lesions in time become intolerable. And in the past, the dentist when hard pressed for diagnosis, found his only recourse in the forcep, the universal dental cure-all. Modern dental practice decries such unnecessary procedures.

These early lesions are momentous signs of future suffering and disease. To ignore them as being insignificant is an indication of ignorance. To recognize them and make no effort toward their correction must in the light of modern knowledge be considered malpractice.

RESUMÉ OF ADAMIS INFLAMMATION AND APPLICATION OF THE PRINCIPLES TO THE INFLAMMATORY PROCESSES WHICH OCCUR IN THE PERIAPICAL REGION

George H. McKee, D.D.S., L.D.S.

INFLAMMATION DEFINED.

Inflammation may be defined as the sense of local adaptive changes in tissues that result from actual or referred injury. By injury here is meant all grades of stimulus from the slight irritation which only quickens the activity of the cell to a damage which nearly or altogether kills them. This includes local reaction to all injury, infection, poison, knife wound, flame, frost, but excludes general reaction to injury and infection.

CAUSES OF INFLAMMATION.

There are four distinct causes of inflammation. (a) Bacteria are most frequently the exciting cause of inflammation whether by direct action in originating the process or as an adjuvant to trauma, as infection after a wound. There are the pathogenic organisms such as bacillus typhosus or streptococcus pyogenes, which can inaugurate inflammation; saprophytic organisms, which can grow in surface discharges and liberate toxins, which can be absorbed and cause inflammation. Every case of bacterial inflammation is a problem in which it is necessary to gauge the virulence of the organism and the resistance of the patient. Bacteria are sometimes found in the blood, travelling from some foci of infection such as abscessed teeth, tonsils, intestines, and setting up an inflammatory process in some other part of the body. It is these "chance" organisms which cause the latent and terminal infections which supervene upon some chronic disease. The process of inflammation is caused not by the mere presence of bacteria but by the effect of the toxins given off from them. The tissues lying within the influence of this toxin become inflamed, those cells facing the toxin in its least diluted form suffering the most severely, the cells further away in a constantly lessening degree.

(b) Traumatic inflammation may be caused by many physical agencies. a blow, puncture, crush, friction, surgeon's knife, etc., all being capable of injuring or killing cells. The dead cells themselves become irritants, by reason of the chemical products of disintegration, so that in every case of trauma there are two factors assisting each other in the production of inflammation.

(c) Chemical.—Besides the chemical by-products of bacteria there are drugs and venoms which have power to injure and kill cells.

(d) Nervous.—Nerves can not only stimulate the tissues but can irritate them, and we find tissues that undergo inflammation solely from this cause. The injury here is often referred from some other part supplied by the same nerve.

IRRITATION ON DIFFERENT CELLS.

There are different grades of irritation. Cells exposed to the least diluted toxin are most damaged and react differently to those farther away. Also if the same grade of toxin be applied to two cells of different orders they will react in different degrees.

The cells of the body may be roughly divided into two classes. the parenchymatous and the supporting. The former are specialized to do special work as nerve, liver, kidney cells. They are more highly trained, less robust, do not reproduce readily, and if one dies, its place may be filled with a cell trained like itself. The supporting cell does relatively simple work; reproduces readily and, if it dies, any other cell may take its place. If we have a poison acting on a parenchymatous cell and a fibrous connective tissue cell side by side. the former is more damaged than the latter, and what is sufficient to kill the former may only irritate the latter to proliferation.

EFFECTS OF IRRITATION ON INDIVIDUAL CELLS.

Effects of irritation on the individual cell of whatever kind. If the toxin is of very slight severity it will at most stimulate the cell to greater activity; if a secreting cell, to secrete; if a supportive cell, to reproduction. If the poison is a stronger one it has the power to produce a change in the cytoplasm of the cell. First there is a cloudy swelling, the cytoplasm swells, outline becomes indistinct and plasma may appear opaque. If the degenerative process goes farther the cell becomes granular. and may show fatty, hyaline, or other degeneration and finally die. If the toxin be yet stronger the cell may be instantly killed. The gradual advance toward death is called the bionecrescent process. Thus where a toxin is acting there will be cells in all stages. Those nearest will be instantly killed, those farther away will be in different stages of the bionecrescent process while those still more remote may be merely irritated to activity of function, phagocytosis. chemiotaxis or reproduction.

INFLAMMATION IN A VASCULAR AREA.

Inflammation in a vascular area or local reaction to injury, the irritant being, for example, bacteria which are multiplying, giving off the toxins in all directions. The first step which is observed on the part of the tissues is a dilation of the capillaries locally with an increased flow of blood. In simple injury no further action sets in. This is referred to as *hyperemia.* Next there is *increased permeability of the blood vessel walls.* This is brought about like the hyperemia partly reflexly and partly by direct action of the toxin on the vessel wall. This increased permeability together with increased pressure causes more fluid to escape than returns to the lumen.

The increased loss of fluid causes a slowing of the blood stream which results in a concentration of the formed elements of the blood. The heavier red blood cells, suspended in plasma, occupy the centre of the stream, while there is a marginal arrangement of white blood cells. As the blood stream slows there is a lagging behind of white blood cells, whole rows of these leucocytes soon appearing at the periphery of the stream.

Owing to the increased permeability of the vessel wall and the marginal arrangement of white blood cells there is an increase in the number of these cells which escape by reason of their amoeboid movement at the junction of the endothelial cells. In severe infection red blood cells also escape. Connective tissue cells in the affected area become separated by the exuded serum so that swelling results. Some connective tissue cells may proliferate. At this stage the inflamed area is a soggy mass of leucocytes. Connective tissue cells, old and new, serum, bacteria, etc., in which the phagocytes and serum are battling for supremacy with the bacteria or other cause of the inflammation. The part will show the classic signs of inflammation *dolor* or pain, *rubor* or redness, *calor* or heat, and *tumor* or swelling. A crisis is reached and either the bacteria increase in number and effect and abscess occurs, or reparative process makes headway and the tissues return to normal with the exception that the proliferated cells remain.

ABSCESS FORMATION.

Death in increased numbers of white blood cells and stasis of the blood stream follows the above-mentioned changes. If this state of affairs lasts any length of time, a local death of tissue—necrosis—will result. A fibrin ferment, likely derived from breaking down white blood cells or of bacterial origin, is set free and there is a deposition of fibrin. A proteolytic ferment of likely similar origin is set free also. The result is liquefaction in the dead tissues in which stasis has occurred, or, in other words, the formation of pus. The centre of the inflammatory mass becomes a mass of dead and degenerated white blood cells, serum, bacteria, fibrin and digested or liquefied tissue. Surrounding this liquefied area there are cells in all grades of disease. The tissues bordering the abscess are dead or dying—further out cells may be fatally sick—until at the periphery of the inflamed area we find cells functionally active in proliferation or phagocytosis. Suppuration in an abscess continues until the abscess breaks to the outside, is opened by incision or stops by virtue of tissue resistance. After pus has been evacuated there is a definite cavity which continues to discharge until all the cavity wall which is dead is thrown off.

REPAIR OF ABSCESS.

After all dead material has been thrown off, there follows a healthy reaction to injury. The connective tissue cells of the part bring forth fibroblasts, large soft vegetable cells which heap up, taking their nourishment from the lymph and from slips of new capillaries that grow between them. The abscess cavity is thus filled with granulation tissue. The cells of this tissue gradually become more fusiform, processes are thrown out and cells become smaller, firmer, and stronger until adult connective tissue cells are formed. Contraction continues until there is a scar of dense and relatively bloodless tissue.

FACTORS IN THE INFLAMMATORY PROCESS.

There are many factors at work during the inflammatory process. *Endothelium of Blood-vessels.* The endothelial cells, by their power of contraction and expansion, in some degree control the emigration of white blood cells and the exudation of serum. These cells are active phagocytes. During inflammation the endothelium takes on an agglutinative quality which in a measure is responsible for the marginal arrangement of the leucocytes. Endothelial cells give rise to mononuclear cells of blood, fibroblasts, phagocytes and budding capillaries.

Serum.—The exuded serum is more bacteriolytic than normal blood serum. Likely most of this new power is gained at the site of inflammation where proteolytic, antitoxic, bactericidal substances are picked up, these being chiefly by-products of white blood cells.

Blood cells.—(a) Leucocytes originate in bone marrow, spleen, etc., and are active phagocytes. These play an important part in the limitation of infection, but it is doubtful if there is a positive chemiotaxis between the bacteria and the cells. As they enter the poison sphere they lose their power of amoeboid movement and otherwise degenerate until death results. By their death they liberate antitoxic, proleotytic and bactericidal substances. They clog the lymphatics or are carried away in the lymph stream. They liberate a fibrin ferment. (b) Lymphocytes and eosinophiles are present in low grade infections and are weakly phagocytic.

Fixed tissues.—The proliferation of the fixed tissues plays an important part in inflammation. Endothelial cells have already been referred to. The fibroblast derived from endothelial cells and fixed connective tissue cells first are round, then become fusiform and finally connective tissue cells. The function of plasma cells is doubtful.

The *virulence of the causative organism* is also an important factor. Depending on the virulency the inflammatory process may run a slow or rapid course. In some cases anthrax poisoning for instance, death of tissue follows very quickly without the manifestations of the varying gradations while again the process may be very slow, even the hyperemic stage not being passed.

The *lymphatics* aid in carrying away excess serum and by-products, but when clogged by white blood cells, etc., there follows a congestion and swelling.

INFLAMMATORY PROCESS IN THE DEEPER TISSUES.

In the deeper tissues the inflammatory process runs its course just the same, but there may be varying types of surface discharges. According to the type of exudate, inflammation may be designated as catarrhal, serous, fibrinous, purulent, necrotic, gangrenous, proliferative, membranous, hemorrhagic, sero-purulent, etc. All are manifestations of the body's reaction to injury. Different organisms may produce various types of inflammation, but the same organism can produce different exudates under different conditions.

VASCULARIZATION OF NEWLY FORMED CONNECTIVE TISSUE.

Vascularization of newly-formed connective tissue depends on the following histo-mechanical principles. (1) Size of lumen of vessel depends on the rate of flow of blood. (2) Thickness of vessel wall depends on the tension in the vessel. (3) The tension in turn depends on the size of the lumen and the blood pressure. (4) Increased pressure in a capillary area leads to formation of new capillaries. (5) Increased nourishment brings about increased cell proliferation.

In that part of the inflamed area where repair of tissue is in progress the hyperemic condition leads to formation of new capillaries. The increased pressure causes a bulging of the vessel wall and this grows into a vessel. Another theory is that the endothelial cells of the capillaries show buddings or thickenings. These buds elongate, send processes outward which thicken and become hollowed out by the blood stream to form capillaries in the form of loops. These with other loops form a vascular framework, supported by and supporting tissue cells or fibroblasts which have simultaneously proliferated.

The above contains the principles of the inflammatory process as outlined by Adami, and now let us briefly apply them to the lesions found in the periapical region.

PERIAPICAL LESIONS.

Periapical lesions may be divided into: Granulomata, abscesses, cysts, and rarefying and condensing osteitis.

A *Granuloma* is a tumor made up largely of connective tissue, the result of a proliferative process following an injury. It is an example of nature's efforts to repair injured tissue and therefore always occurs at the site of injury. In all cases of granuloma the initial injury is a mild one caused by drugs, low grade infection, etc., and the inflammatory process is therefore mild and progresses slowly. As we would suppose from our knowledge of inflammatory process, granulomata are made up of budding fibroblasts, new capillaries, polymorphonuclears, leucocytes, lymphocytes, plasma cells and in this case frequently epithelial elements derived from the peridental membrane. The polymorphonuclear leucocytes are chiefly responsible for keeping the infective agent under control. The lymphocytes which are characteristic of low grade infections act as a second line of defence ingesting waste products but not bacteria.

Acute alveolar abscess is a manifestation of nature's reaction to a strong infective agent. It is a destructive process resulting from a severe inflammation, due to infection. The infective organisms may be few in number but virulent, or there may be a large number of low virulence. The regular succession of events of local reaction to injury takes place—hyperemia, increased permeability of vessel wall, slowing of blood stream, etc. About ten hours after, depending on the virulence, pain begins. Then follows the formation of pus, and as the amount increases, the abscess becomes larger, and more of the surrounding tissue is involved. When cancellous bone is reached a condition of osteomyelitis is set up. Pus travels by Haversian canal along the lines of least resistance until periosteum is reached. Here it may penetrate the periosteum and enter the soft tissues, or may lift the periosteum from the bone and form a flat tumor. In any case, the mucous membrane may be penetrated and a discharge of pus will follow. The reparative process accompanying inflammation may gain supremacy at any stage and regeneration of tissue take place.

Generally the chronic form of abscess follows the acute where there has been no surgical interference, the chronicity being generally due to the presence of necrosed tissue which remains unabsorbed.

A *Cyst* is a tumor consisting of a liquid, gelatinous or pultaceous material about which is a capsule condensed from the surrounding tissue and lined with epithelium. Cysts may develop from granulomata containing epithelium in their substance, the epithelium being pressed to the wall as the fluid increases. The fluid is quite frequently straw-colored.

The cysts accruing in the periapical region are liquefaction cysts, resulting from liquefaction necrosis of tissue. The fluid in them is often sterile, the contents being so toxic that the organisms are killed. The dividing line between a cyst and the surrounding tissue is very definite.

Rarefying Osteitis is a condition in which there is a decrease in the lime content of the bone and an increase in the soft content. The degenerative change is due to some irritation, infective or non-infective.

Condensing Osteitis is a condition the reverse of rarefying osteitis. On account of the hyper-activity of the osteoblasts, bone is laid down in the infected area. This condition is also caused by some irritating agent, infective or non-infective.

It is very necessary to obtain a clear understanding of what inflammation is, how it begins and progresses, because many of the cases the dentist is called upon to treat will in some way involve this process. He can only diagnose and treat the special cases of inflammation and their sequelae by knowing that the same general laws underlie them all, however diverse in appearance.

PROPHYLAXIS PATHOLOGY, TONGUE CLEANSING, TONGUE INDICATIONS

Jules J. Sarrazin, D.D.S.

Read at meeting of Orleans Parish Medical Society, November, 10, 1919.

Prophylaxis of the mouth is prophylaxis of the body. "The mouth is the gateway of life"; keep it pure.

Even in the absence of any suppuration around teeth roots, or at their apices, whence metastatic effects are readily understood, the mouth may harbor the etiology of disease to tonsils, larynx, bronchi, stomach, intestines and the appendix.

As long as the diet of primordial man consisted of uncooked food only, the creamy mouth residue which remained between teeth, in their sulci and at their gums lines, was readily soluble in oral fluids, and was therefore gradually eliminated by active secretions, expectoration and deglutition. The teeth required no care, and the dorsum of the tongue accumulated no deposits made up of ispissated mucus, dead epithelial cells and decomposing vegetable and animal matter, breeding germs.

Conditions began to change when the Cro-Magnon man discovered the use of light and fire, twenty-five thousand years ago, and started the cooking of food. The effect of cooking foodstuffs is well illustrated by the coagulation of albumin by heat. Starting with its advent, creamy remnants from mastication began to leave an insoluble residue at teeth necks, between them especially, and on the dorsum linguæ, as boli of food brushed over, which became an ideal pabulum, helped by animal heat and moisture.

Of course, such a change was extremely gradual, habits of life maintaining active circulation, causing the lingual papillæ to secrete actively, thus carrying away residues which would otherwise become dangerous pabula, while a large proportion of coarse, hard, fibrous food, and copious alkaline saliva from glands, still protected against caries, and if some streptococci and staphylococci lodged at gum margins, phagocytes backed by an active circulation of arterial blood left no opportunity for any serious damage to be done. However, from that time on, skulls do show occasional caries and dental periclasia, no doubt due to intense infection at small areas, but no general alveolar atrophy from dystrophia, which has since become a habitual condition. Exceptionally, however, we still see mature individuals whose lingual papillæ and mucus glands are so active that accretions do not occur at the dorsum of their tongues, although they may not be free of gingival infection leading to pyorrhea. It is also noticeable that such exceptions occur in men who lead a very active life in the open air: farmers, laborers, lumbermen. The rule is, on the other hand, that it only requires smelling the semi-liquid or creamy foul deposit which may be removed from the dorsum of the tongue to prove that a most intense and dangerous infection is there going on, unheeded, and ready to afford favorable symbiosis to any germs entering, from influenza to tuberculosis, or typhoid bacilli.

Bacteriological tests made from patients, and with classes of students, with the most careful technique, ages ranging from twenty to fifty years, show that the dorsum of the tongue is hardly ever free of staphylococci and streptococci, and that, in the very great majority of cases, such deposits contain both germs, frequently running as high as ninety per cent. of the mass. In fact, in some instances, there seemed to be nothing but germs, all parts of the creamy films removed yielding the same generous mixed growth of staphylococci and streptococci, frequently including streptococci viridans, and of course other germs habitual to the oral flora.

It should also be noted that filmy deposits at the tongue's dorsum are seldom found in *healthy* children, unquestionably due to the greater activity of secretions of papillæ and mucosa, as a result of more energetic arterial circulation.

The tonsils are practically in contact with the back of the tongue while at rest. They are highly vascular, but also easily permeable, and due to lack of muscular contraction, may frequently contain less arterial than venous blood; and phagocytic leukocytes lose activity in the latter. It is therefore easily understood that tonsilar infection would occur by contiguity; and more tongue cleansing would lessen tonsillectomy. Tonsillitis, not follicular, or which has not reached the suppurative stage, responds to rigidly enforced germicidal mouth treatment, backed by tongue cleansing and gargling.

The microscopical moisture globules gathered in the mouth and in the pharynx, as well as in the nasal passages, will carry germs by respiration, if there be intense infection at gum lines, at the dorsum linguæ, at tonsils or at Schneiderian membranes, causing laryngitis, bronchitis, bronchial catarrh.

Food which has been masticated where pus exuded from sockets, or where it gathered infection from films on teeth, brushes over the back of the tongue, leaving more germs there, with pabulum for their growth, and goes down the alimentary tract. Some germs are destroyed by digestive secretions, all staphylo and streptococci, if they be comparatively few; but, if infection of the boli of food is intense, enough germs escape and lodge in tissues to cause such disturbances as gastritis. septic gastritis, gastric erosions and ulcers; and lower down: diarrhœa, intestinal toxemia, appendicitis. Lack of tissue resistance to a milder infection also counts.

The metastatic effects of oral infection cannot be traced directly to an infected tongue, or to infectious films on teeth, or to pus admixed to food in mastication; although, indirectly, germs which have escaped the destructive digestive cataclysm, and have found a habitat in alimentary tissues, could be carried elsewhere by circulation; but the prolific cause of metastatic manifestations may be found even more in pyorrheal pockets, where pus is in direct contact with piloetic bone and mucous tissues, than in granulomas at root apices, around which nature has built a protective membrane. However, pyogenic bacteria frequently break into tissues surrounding granulomas, and large adjacent necrotic areas are frequently formed there. Still, infection absorbing areas in pus pockets about roots are, as a rule, considerably more extensive than at their apices.

Wherever circulation is less active, liability to infection and its effects are increased. Arthritis, in all its forms, and gout, are frequent metastatic manifestations of alveolar and apical infection, while rheumatic fever expresses the effort of the organism to rid itself of the toxins thrown in circulation.

As the spleen destroys blood cells, which, as the result of constant infection reaching the blood stream, have become unfit for circulation, because infective germs were too numerous to be disposed of by opsonius, agglutinins, bacteriolysins and phagocytes, anemia results as cells are destroyed faster than they can be derived from the bone marrow, and simple anemia, in the presence of intense infection, may become pernicious anemia.

Fundamentally, resistance to infection depends upon the quality of blood and its circulation. When quality is impaired by chronic infection, phagocytes and adjuncts exhausted in the fight, some erythrocytes destroyed, the individual readily succumbs to any extraneous specific infection encountered.

Neurosis, which in turn disturbs bodily functions, results from the effect of vitiated blood on nervous tissues.

Blood may bring infection to kidney or liver, causing nephritis or abscess.

The heart which is constantly filled with infected blood develops endocarditis.

Cerebro-spinal disturbances have resulted from intense chronic infection, not corrected early enough, and even, in time, impairment of the cellebellum, causing death.

The above are frequent results of oral infection. Of course, the infection may come from some other focus in the body, nor is it intended to convey that pathological disturbances may not have had another cause, but other infective etiology in the body is not apt to be carried for years, like in the mouth, in complete ignorance of the fact. Hygiene tolerates the presence of pus nowhere in the body; in the mouth it is simply overlooked, because its dangers are not fully realized.

It should be the routine of every physical examination, and a prerequisite to treatment, that careful probing be done all around every tooth in the mouth to discover the presence of the slightest and slenderest pus pocket, and that the apices of all teeth bearing large fillings or crowns, or place where the absence of teeth may mean a hidden root, be all radiographed.

This is the dawn of the blessed age of prophylaxis, and as already said, prophylaxis of the mouth, for the reasons just mentioned, is prophylaxis of the body.

Caries of teeth, leading to the eventual infection and death of tooth pulps, the infection from whose decomposition and putrefaction reaches through foramina into the fundus of alveolar sockets, is, in a great measure, preventable by proper and faithful home oral prophylaxis. At least, the most dangerous type of cavities is preventable, those which weaken the teeth the most, and reach tooth pulps the faster: those cavities which start on the surfaces of contact between teeth. Cavities developing as a result of faulty enamel fissures on morsal surfaces are not preventable, but they are less dangerous, and can easily be detected before tooth pulps are threatened.

Infection at gum margins is preventable; and there, again, the greater danger is located at the necks of teeth, approximately, in films o finspissated mucus into which lodge dead epithelial cells, bacteria and thin creamy exudates from mastication, to form an ideal culture medium with the help of warmth and moisture. Lime salts lodge into the infectious films thus formed and concrete into hard deposits. Whether it be films only, or films into which calcium has deposited; with more films over, and other layers of chemical masses of lime salts gradually superimposed, matters not. The important fact is that either contain the same pyogenic infection, of course including strepto and stapylococci. At first, their toxins irritate and congest gum margins, opening cells to the penetration of streptococci, which are followed by the destructive staphylococci, and as minute capillaries break, leukocytes exude, phagocytes now helpless, which decompose to form pus, while the phosphates and urates, from the liberated plasma, mix with bone cells disintegrated by the pus to deposit on to roots, starting into cemental pits bared by the suppurative destruction of the pericementum.

Emphatically, it is the same old and unchangeable etiopathological march of infection, congestion, inflammation, suppuration, and manifests in the mucosa of the mouth exactly as it does anywhere in the body; except that roots, with exposed cemental pits in them, are present to retain the foundation layer of phosphate and urates of lime and soda to build serumal calculi; which, in their turn, are irritants, since they are built by infective processes; just ordinary etiology and pathology, and the process reaches deeper and deeper until dental periclasia leaves no bone to support roots.

Of course, this local pathology takes no account of tissue resistance and of mandibular and maxillary diploetic dystrophia and atrophy, which latter are habitually present in individuals inclined to sedentary habits, but such fundamental considerations and their remedy need not be dwelt upon to physicians. That systemic part of the prophylaxis against tissue infection needs no emphasis, but details covering the local aspect of it may prove interesting.

The point of greater danger is between teeth, because germs there are left undisturbed. Properly constructed brushes can reach somewhat into embrasures between teeth, but, even worked from both sides, do not penertate deeply enough to thoroughly break up approximal films, especially if teeth are nearly as wide at gum lines as at biting surfaces, and this is unfortunately frequently the case. Waxed silk tape, preferably manufactured with powder incorporated in it, entered between teeth with a sliding motion, and separately rubbed gently against each tooth, is an unfailing means of scattering infectious material and exposing it to germicidal powder and mouth wash. Constant repetition of that technique polishes contact surfaces of teeth, and thereby reduces their tendency to retain infectious films.

A fresh charge of dry powder, on a dry brush, taken by plunging in powder poured into a small glass, should be repeated for each few teeth, so that all get thorough scouring and polishing. Every time saliva drenches the brush, it should be wiped. The lingual sides of teeth should receive even more attention than the outer surfaces. This is particularly true of molars, the lower ones especially, because difficulty of access tends to cause baneful neglect in such locations; and the wider the teeth, the more infection they may accumulate. In all positions, brush bristles should move inside and outside, above and below. Cross brushing injures both teeth and gums, and fails to push bristles into embrasures between teeth to complete the good work of the powder-charged-waxed-silk tape.

Tongue cleansing need seldom be done more than once a day, unless infectious filth is plentiful. The best time for it is in the morning on an empty stomach, so that no vomiting ensues, if gagging occurs. Infected teeth at gum margins infect tongue dorsal deposits, and the latter re-infect teeth and gums within a few minutes after cleansing with tape, brush, powder and mouth wash, if tongue deposits are thick, and therefore readily liberate some of their material. A vicious circle if thus formed unless infectious material at the back of the tongue is also removed. It is noteworthy that when tongue cleansing has been practised for a few weeks, in faithful conjunction with tapeing, brushing, flushing and gargling, it can usually be dispensed with, or its frequency lessened, clearly showing the inter-action mentioned.

The frequency of tapeing, powder brushing and mouth flushing, is a matter of bacteriology. In a reasonably clean mouth, fermentation of cooked starchy creamy material, resulting from a meal, begins about two hours later. Decomposition of vegetable and animal matter starts in three hours, and putrefaction follows in about another hour, thanks to the ideal incubative conditions present. In a filthy mouth, those processes are hastened, because mastication has added fuel to the fire already existing, and, in an unusually clean one, they are retarded. In other words, the more germs already present to start processes, and the more intense they become. Hence the safe rule of tapeing, powder brushing, and mouth flushing just as early as possible after each meal, repeating them at bedtime also, and tongue cleansing only upon rising in the morning.

During sleep, mouth secretions are suspended, and germs in the mouth are left undisturbed. Moisture and heat favor their rapid development, and the smallest traces of starchy, vegetable or animal matter offer ideal pabulum for their growth. Therefore, unless not a morsel of food, solid or liquid, has passed the lips since the last meal and bedtime, and the most thorough mouth cleansing has been done after that last meal, it must be repeated at bedtime. If the mouth has been used for water and air only, following cleansing after the last evening meal, then, germicidal mouth wash flushing and gargling will suffice at bedtime.

Making bedtime mouth cleansing a "sine qua non," the greater the lapse of time following a meal preceding it and itself, and the greater the infective danger leading to caries and gum lesion. Hence, after bedtime cleansing, the next in importance will be *after* breakfast, while a safe compromise measure, in a clean mouth, will allow a few hours delay after lunch, and waiting until bedtime after the evening meal. However, to safely allow such a compromise, without danger, requires that conditions favorable to the maintenance of cleanliness be established by scaling away every vestige of frosty infecto-calcareous deposits, at and slightly beneath gum margins, approximally especially, followed by the most thorough leveling and smoothing of all fillings and crowns, which might retain infection beneath edges, especially at approximal gum margins, and finally, the most searching polishing of all surfaces of all teeth, giving particular care to gingival teeth necks and approximating surfaces between them, just where accurate polishing to facilitate personal care is most difficult. Safety calls for the thoroughness of the patient's technique besides.

Once a patient is trained in tongue cleansing, it need not be repeated by the operator. Protrude the tip of the tongue as far out as possible. Pass a clean cloth under it, and wrap to afford grip, while nasal respiration is done at the same time, to reduce motion and gagging. Reapeat cleansing, *not scraping* strokes, with a tongue cleanser, avoiding papillæ, until no scum shows at the dorsum linguæ.

It is common practice to neglect mouth personal prophylaxis, while simply ailing, or during illness. While the system is already the prey of some specific infection, which has gained entrance through favorable incubative conditions in the mouth, more frequently than by other channels, it is not the time to throw upon the resisting elements of the body more infection of the same kind, or from other symbiotic germs which thrive in the mouth. Mouth neglect at such times amounts to reinforcing one's enemy. It is excusable to only mop teeth and gums with a germicidal solution while the patient must not be moved at all, but the solution should be positively permicidal, and swabbing should be repeated every hour, except during rest, the nurse observing periods when it is expected in order to make mouth cleansing precede it. Moreover, such mopping should be thorough, including both inside and outside surfaces, above and below, and extending to and around all rearmost molars. If wooden applicators be wet for a few minutes, it becomes possible to curve them at one end, so that a wad of cotton, previously wound on them securely by the thumb and index finger, will have ready access to all parts of the mouth. As soon as conditions allow, the patient's mouth should be cleansed by the nurse as thoroughly as might be done in health. Nurses should be practiced in entering waxed-floss-silk-powder-charged tapes between teeth, with a sliding motion that does not snap down on gums, and in the proper vertical motion of brush bristles dipped in dry powder. It is no wonderful performance to cleanse all the left teeth, both above and below, in and out, while the patient lies on the right side, and vice versa; tongue cleansing done in either position, and mouth flushing in both. When the patient is unable to work tongue and cheeks, the nurse may use a Moffat Syringe, or any other suitable one, for mouth flushing and irrigating between teeth. Unfortunately, nurses are not trained in proper mouth cleansing, and a very important aid to patients' comfort and recovery is neglected, considering the depressing influences which result.

Objection is sometimes raised to tongue cleansing on the ground that clinical indications may be removed which should be preserved. Nothing is more deceptive, because what is removed is infective, and is always a menace to health, and because important tongue readings do not depend on the dorsum linguæ, whence infectious deposits are removed. The main instance of tongue dorsal reading is the usually accepted indictaion of costiveness by such deposits, but there are surely more accurate evidences of constipation. Nor is it logical to assume that boli of food, in deglutition, scrape and cleanse the back of the tongue. This would be true if we swallowed masticated grass, or flesh with fur; but the thin creamy exudate expressed from an ensalivated bolus of papy cooked material happens to supply pabulum-deposit, instead of removing it.

The so-called geographic tongue shows in patches, at lateral margins and over the entire surface, as well as near the base of the tongue.

The painful tongue of acute plossitis, accompanied by dribbling of saliva, rare dryness, pain at angles of the mandible and at sides of the neck, the tongue red and swollen, with deep fissures on its upper surface, and notches marked at lateral margins by contact with the teeth, would not be diagnosed by dorsal deposits.

Chronic glossitis, with roughness and dullness at some spots, and glazing at others, with surface fissures that do not bleed, and are not sensitive to contact, is not blurred by tongue cleansing.

Mouth infection is usually responsible for both forms of glossitis.

The impeded motions of the tongue, which indicate cerebral or hypoglossal nerve disturbance, are not affected by tongue cleansing, nor are the dark brown deposits covering the entire lingual surfaces, noticeable in severe acute disease, especially in typhoid conditions, when, by the way, the care of the mouth becomes impossible beyond the swabbing already described, until systemic improvement allows more.

The epileptic, who bites his tongue, leaves marks which may not be hidden.

The dry and bright red strawberry tongue of scarlatina is not confined to the rear dorsum; neither the bluish tongue of cyanosis, nor the dangerous lead colored tongue can be disguised.

A black coating spread on the lingual surface is often a fatal indication in dysentery and smallpox. Tannin in a mouth wash, which is of great value in pyorrheal conditions, because it acts indirectly as a pus solvent by retaining more blood in tissues, will leave small black patches or streaks, but such streaks are quite unlike the black coating of dysentery or smallpox.

Dorland Medical Dictionary, eighth edition, page 1013, describes a coated tongue as "a tongue covered with a whitish or yellowish layer consisting of desquamated epithelium, debris, bacteria, fungi, etc." Should they remain?

BIBLIOGRAPHY.

Hartzell—"Journal of the National Dental Association."
Osborn—"Men of the Old Stone Age" (2nd edition).
Adami and McCrae—"Pathology."
Mallory—"Pathologic Histology."
Halliburton—"Human Physiology."
Pierce and McCleod—"Human Physiology."
Anders—Boston—"Medical Diagnosis."

Dental Societies

REPORT OF THE ORAL HYGIENE COMMITTEE

The Oral Hygiene Committee of the Ontario Dental Society desires in presenting its annual report to thank the members of the dental profession for their hearty and sympathetic support and co-operation.

At the beginning of the year and shortly after the appointment of the provincial dental officer the committee sent out a request to the dentists of the province asking them to give without fee, a sufficient amount of time to conduct a dental survey of the province. The response to this request was most gratifying, and thus far arrangements have been completed for the inspection of more than one hundred thousand children.

The results accomplished by this survey have been satisfactory. The parents when notified of the defects have provided the necessary treatment. The value of oral health and the untoward results following dental diseases have been emphasized by the inspectors and appreciated by the people; while many municipalities, alarmed at the deplorable condition of the children's teeth, have established a permanent school dental service.

During the convention of the Ontario Educational Association the committee gave a complimentary banquet to the Public and Separate School Inspectors of the province. A most enjoyable evening was spent and the inspectors went away with a firm conviction that a school system of dental inspection and treatment was an absolute necessity, if the health of the school children was to be protected, and with a determination to do everything in their power to bring about the accomplishment of this worthy purpose. Papers and addresses emphasizing the need for a school dental service were presented at the Ontario Educational Association and at many of the meetings of the Teachers' Institutes, and resolutions were sent to the Minister of Education urging a more aggressive policy on the part of the Government.

Arrangements have been completed whereby addresses on dental inspection and preventive dentistry will be given at the annual meeting of nearly all the Teachers' Institutes. We will need about eighty dentists to give these lectures and we would be obliged if any of the men present who are willing to assist in this educational endeavor would give their names to any member of the Oral Hygiene Committee. These names will be sent on to the local School Inspector and the necessary arrangements made.

The Department of Education has consented to publish a Health Bulletin which will be placed in the hands of each school teacher in the province. Your committee has been requested to supply the material for that part of the bulletin dealing with dental matters. It is to be hoped that when this bulletin has been completed the Department may be persuaded to place one in every home in Ontario.

This year there will be an up-to-date dental clinic exhibit in the Government Building of the Canadian National Exhibition. The dentists of the province are invited to visit this exhibit and examine the equipment which will be the most modern obtainable. You are also requested to urge your local school authorities who may visit the Exhibition to see the clinic and obtain valuable information in regard to the importance of dental inspection.

The Oral Hygiene Committee has decided to continue the publication of dental articles in the newspapers of the province, and a sub-committee has been appointed to supervise the preparation of the articles to be published. We would like each dentist to see that these articles appear regularly in the local press of his town, and if they do not, to find out why they are not published. We are sending this material to only one paper in each town and will be pleased to supply upon request a list of such papers, or to inform any dentist in regard to which paper in his town is receiving the articles.

The teacher training department has consented to have dentists give a short course on preventive dentistry to the students in the Normal School so that the teachers may be better qualified to teach this important branch of Hygiene. During the month of July a course of lectures and clinics on school dental inspection will be given to about seventy-five of our school nurses and some others who are preparing to take up this important work.

In the opening paragraph of this report we gave an account of the provincial dental survey and stated that the results obtained had been satisfactory. The survey was a great success, but greater and more permanent results would have been achieved had the Government made provision for a departmental officer to follow up the work done by the dentists, compile the statistics and present them to the local municipal

B.A., and Gregson, W. E., equal; Bernfeld, B., and Kutzman, E. A., equal.

Operative dentistry—Ratner, M.; Bernfeld, B.; Hyams, B. L.; Solomon, N., equal; Rosenbaum, F. L., and Weiner, J., equal; Kutzman, E. A.; Shkiar, L.

Prosthetic dentistry—Kutzman, E. A.; Shkiar, L.; Ratner, M.; Rosenbaum, F. L.

Dental jurisprudence—Rosenbaum, F. L., and Crowe, A. D., equal; Swancesky, A. A.; Gregson, W. E.; Ratner, M., and Russell, S., equal; Hyams, B. L.; Bernfeld, B., and Shkiar, L., equal; Goldwater, E. B. A., and Laurin, E. M., equal; Burton, T. E., and Solomon, N., equal; Weiner, J.; Hale, G. M.; Kutzman, E. A.

History and economics—Kutzman, E. A.; Ratner, M.; Bernfeld, B.; Hyams, B. L., and Rosenbaum, F. L., equal.

PASS LIST.

The following, in order of merit, have fulfilled all the requirements and passed all the examinations of the third year: E. A. Kutzman, Montreal; M. Ratner, Montreal; E. M. Laurin, Montreal; F. L. Rosenbaum, Montreal; B. L. Hyams, Montreal; B. Bernfeld, Montreal; J. Weiner, Montreal; W. E. Gregson, Victoria, B.C.; E. Goldwater, B.A., Lachine, Que.; Louis Shkiar, Montreal; S. Russell, Toronto, Ont.

In addition to the above G. M. Hale has completed all subjects with the exception of prosthetic dentistry; N. Solomon all subjects with the exception of pathology, and Mr. G. S. Veith all subjects but materia medica.

THE CANADIAN DENTAL ASSOCIATION, OTTAWA AUGUST, 17, 18, 19, 1920

The tenth biennial convention of the Canadian Dental Association to be held in Ottawa, August 17, 18, 19 and 20th, is the first to be held in Canada in four years, the last meeting being held in Chicago in 1918 in conjunction with and as the guests of the National Dental Association of the U.S.A.

The executive are out to make this the best meeting yet held by the Society, to provide a programme which will appeal to all, to present practicable teaching of possible methods for the everyday practitioner, and ideal procedure for our inspiration and incentive.

Canada now has 2,600 practicing dentists, and C.P.A. conventions being held only once in two years and being nation-wide in their scope, ought to be the biggest thing in dentistry in Canada. You have your share of responsibility in this: that is to attend the convention, to influence the other fellow to come, and when you do come to take an active interest in the proceedings.

The Ottawa Normal School, which is central and admirably suitable for the occasion, has been secured. Don't let the thought of the heat stop you. The school is situated beside Cartier Square and in the middle of a park, the breeziest place in the heart of the city.

Ottawa will be at its best in August. It will be a wonderful opportunity to see the Capital City, the new Parliament Buildings, the famous Driveway, the scenic Gatineau district of the Laurentian Mountains, and the Ottawa River basin.

A strong local committee has been formed under the chairmanship of Dr. C. H. Juvet, which will provide for you a profitable and pleasant experience. The following men have been secured to date for the papers and discussions:

Drs. Kirk of Philadelphia, Clyde Davis of Lincoln, Nebraska; Weston Price of Cleveland, Charron of Montreal, G. K. Thompson of Halifax, Wallace Seccombe of Toronto, the Hamilton Clinic Club, and Deans Webster, Thornton, Nolan and Woodbury of the dental faculties of the Universities of Dalhousie, Laval, McGill and Toronto.

Table clinics will be given by men from every Province.

The meeting will be under the chairmanship of Dr. Woodbury.

> "A man's reach should exceed his grasp,
> or what's a heaven for?"—Browning.

The surest road to stagnation and retrogression in any profession or business is isolation from our fellows of the same calling.

The dentist is no exception. It is only by coming in contact with other minds and personalities, by the exchange of ideas, with its spur and tonic effect, that latent possibilities in oneself are brought out. Half formulated thoughts find their complements and the half ideas which were of no value to either of you become whole and an asset and incentive to both. What if you do hear someone with a "million dollar" practice get a lot off his chest about how it "should" be done (that's just where your "reach exceeds" your "grasp." Some day you'll grasp that rung and "reach" for a higher one). He's undoubtedly right or he wouldn't have achieved his present success. The difference in the circumstances of your neighborhood and his may make it impossible for you to do what he does, but you may "grasp" at the better method, improve your technique, give your patients better service and have the satisfaction of knowing that you, and you alone, are responsible for a better degree of health and comfort in your people, than would have been possible had you not come to the Canadian Dental Association Convention in Ottawa, August 17, 18, 19, 20th of this year.

GRADUATES IN DENTISTRY—UNIVERSITY OF TORONTO AND ROYAL COLLEGE OF DENTAL SURGEONS

MAY 7, 1920

Clarence H. Avery, Frederick E. Babcock, Arthur A. Backus, John W. Bartholomew, Fay W. Beach, Lorne R. Bell, William M. Blakely, Kenneth A. Blancher, Willard M. Box, Randolph W. Bradley, Benjamin Bragman, Hubert M. Brown, Harold G. Brownlee, Ronald F. Butler, Gordon A. Buttery, Howard J. Caulfield, Alexander M. Clark, Victor A. Clark, Charles C. Clermont, Albert F. Cooper, Jacob G. Countryman, Clifford A. Courville, Lloyd H. Croft, Harry Davidson, Harry R. Day, Louis F. Dupuis, W. Lorne Durant, Harvey W. Eckel, William Ewart, Royal F. Fralick, James E. Fraser, Gordon L. Frawley, Roy W. Freestone, Herbert R. Garbutt, George A. Gemeroy, James F. Giffen, Cecil S. Gilbert, James Golding, Fred G. Gollop, Archibald W. Grace, John A. Graham, John C. Green, Gordon A. C. Gunton, William A. Hartley, Rowland E. Haryett, Nelson W. Haynes, Michael J. Heney, James H. Herrington, Edgar J. Hesson, Elgin D. Hicks, Roland R. Hillis, Isaac L. Himelstein, Robert J. Hiscox, Wendell T. Holmes, Percy C. Hughes, Joseph T. Irwin, Leo A. Johnson, George Joynt, Charles J. Kelley, Edward T. Lajoie, Joseph V. Lally, John S. Lapp, Howard W. Leach, Victor C. Long, Benjamin Lundy, Erle S. McBride, Hugh McCrostie, George McKee, John R. McLachlan, Lorne E. MacLachlan, Robert C. McLaughlin, Charles A. McLean, William D. MacLeod, Peter H. McNichol, Maximilian A. Mayer, Sidney A. Milburn, Lloyd J. Miller, William J. H. Miller, Wallace B. Mitchell, Eiju Miyake, Samuel Model, Charles E. Morgan, George S. Morgan, James D. Morrison, William R. Morrison, Gerald A. Morton, Carl T. Moyle, Nicholas J. Murphy, George A. O'Connor, Andrew M. Palmer, William A. Pommer, George G. Perdue, George Pollock, Wilfrid W. Race, Ernest A. Reid, William R. Richardson, Hugh A. Ross, Jake Rubenstein, Ernest A. Sadleir, William M. Seymour, John O. Shaunessy, Victor D. Speer, William W. Speers, William A. Spence, John H. Strath, Harold T. Taylor, Joseph Teich, Wendell W. Voaden, George T. Walker, Ernest J. Walroth, Arthur H. Walton, Frank A. Weese, Arthur H. Wilson, Louis M. Weintrope, Palmer H. B. Wood.

ONTARIO DENTAL ASSOCIATION OFFICERS

The Ontario Association elected the following officers: President, Dr. J. A. Bothwell, Stratford; vice-president, Dr. Percy Moore, Hamilton; secretary-treasurer, Dr. J. A. Bothwell, Toronto. Board of governors is as follows: Drs. F. J. Conboy, O. G. Claxton, C. E. Brooks, E. L. Gausby, William Chalmers, and M. Rutherford.

DENTAL NURSES GRADUATION, R. C. D. S.

The following dental nurses received their certificates of graduation at a special commencement in the Dental College, May 8th, 1920: E. Arnott, B. Pearl Bartindale, Tresta May Burley, Victoria Cotton, M. Jordan, J. M. Laing, G. F. Lewis, L. C. Mackel, F. Maitland, M. Meadows, F. E. Myles, H. MacConnell, R. Osher, G. I. Rymal, M. E. White, G. Whitehead.

Editorial

EDITOR:

A. E. Webster, M.D., D.D.S., L.D.S., Toronto, Canada.

ASSOCIATE EDITORS:

ONTARIO—M. F. Cross, L.D.S., D.D.S., Ottawa. Carl E. Klotz, L.D.S., St. Catharines.

QUEBEC—Eudore Debeau, L.D.S., D.D.S., 396 St. Denis Street, Montreal; Stanley Burns, D.D.S., L.D.S., 750 St. Catherine Street, Montreal; A. W. Thornton, D.D.S., L.D.S., McGill University, Montreal.

ALBERTA—H. F. Whitaker, D.D.S., L.D.S., Edmonton.

NEW BRUNSWICK—Jas. M. Magee, L.D.S., D.D.S., St. John.

NOVA SCOTIA—Frank Woodbury, L.D.S., D.D.S., Halifax.

SASKATCHEWAN—W. D. Cowan, L.D.S., Regina.

PRINCE EDWARD ISLAND—J. S. Bagnall, D.D.S., L.D.S., Charlottetown.

MANITOBA—M. H. Garvin, D.D.S., L.D.S., Winnipeg.

BRITISH COLUMBIA—H. T. Minogue, D.D.S., L.D.S., Vancouver..

VOL. XXXII. TORONTO, MAY 15, 1920. No. 5.

ATTEMPT TO VIOLATE NEW BRUNSWICK DENTAL ACT FAILED

The Law Committee of the Legislature considered a bill to amend the act for the registration and qualification of dental surgeons in New Brunswick. P. J. Hughes appeared in support of the bill, the aim of which was to permit William Gerrard, of Fredericton, to be registered as a dental surgeon A large delegation of registered dentists from all over the province appeared in opposition to the bill. H. O. McInerney of St. John appeared on behalf of the Dental Society of New Brunswick which opposed the bill. Others who were heard in opposition to it, were Dr. W. P. Broderick, of St. John, President of the Society, Dr. W. H. Steeves of Fredericton, Dr. O. B. Price, ex-M.P.P. of Moncton, Dr. F. A. Godsoe of St. John, Dr. Karl Damon of Woodstock, Dr. F. C. Bonnell of St. John, Dr. R. M. McGibbon of Fredericton, Dr. A. J. Cormier of Moncton, Dr. G. F. Clarke of Woodstock, Dr. William Gillespie of Moncton and Dr. A. R. Currie of Woodstock.

Mr. Hughes, for the bill stated that the desire was to allow dentists who had practiced in Great Britain prior to the New Brunswick Act of 1890, to practice dentistry in the Province of New Brunswick. He pointed out that by the Act of 1890 all practicing dentists in the province had been registered without qualification being required. The bill asked that a man who had been in the position in Great Britain similar to that in which those dentists registered in 1890 should be in New Brunswick, prior to that time be now registered.

After speeches for and against the bill the commission went into private session and considered the bill.

After some time being devoted to consideration it was decided that the commission would not report the bill.

Editorial Notes

Dr. Sebben has begun a dental clinic in Stratford.

❧

Dr. Clay has taken over duties at Moxham hospital at Sydney, N.S.

❧

Dr. Smale, Toronto, has opened a dental office in Beamsville, Ont.

❧

The dentists of Kenora are making a survey of the school children's teeth.

❧

A dentist in Fredericton, N.B., is charged with a violation of the Liquor Act.

❧

The School Board of Moose Jaw will buy dental equipment for schools.

❧

The research fund of the Canadian Dental Association is making good progress.

❧

Veterans may still have their dental work done though they have been demobilized.

❧

Dr. Gosnell, a graduate of University of Pennsylvania, has begun practice in St. John, N.B.

Soldiers Civil Re-establishment has taken over the dental service in the St. John, N.B., area.

❧

Dr. Shirly W. Bowles, a well-known Washington dentist, is now in practice in Los Angeles, California.

❧

Drs. Williamson and Commins have entered into partnership to practice dentistry in St. Stephen, N.B.

❧

Dr. Freeman has been appointed to inspect the teeth of the school children in Clinton township, Ontario.

❧

Dr. Jackson, who was overseas in the C.A.D.C., and also the infantry, is now in practice in Nanaimo, B.C.

❧

Dr. J. M. Deans, Galt, who has been a member of the C.A.D.C. since the beginning, leaves the service at once.

❧

The Oshawa "Reformer" wonders if painless dentistry is painless to the dentist or the patient.

❧

Let us again say that only 15 per cent. of the people have any acquaintance with a tooth brush.

❧

Dr. Casson a recent graduate of Baltimore College of Dental Surgery, will practice in Truro, N.S.

❧

Drs. Clark, Shaver, Carroll and Woodrow, Brockville, are making a survey of the children's teeth.

❧

The Ontario Dental Society has set the standard for painless dentistry, according to the public press.

❧

It is remarkable how many dentists and physicians have come home from the war with a sure cure for pyorrhoea.

❧

Thieves entered three dental offices in Galt, Ont., and gathered in about a hundred dollars worth of precious metals.

❧

Dentists of Winnipeg entertained Mayor Gray at luncheon on the occasion of a visit of Dr. Arthur Smith to that city.

❧

The dentists of Sydney, N.S., have agreed to care for the teeth of the needy poor if the city will supply the equipment.

❧

Dr. C. N. Johnson delivered the address to the graduating class of the Royal College of Dental Surgeons, May 7th, 1920.

Major Cameron and Lieutenant Gardner in M.D. 12, will remain on the strength to finish up any remaining dental work.

⁂

An oil painting of Col. H. R. Abbott was presented to the Dental College on the occasion of the opening of the new wing.

⁂

The Regina Dental Society held a meeting on April 8th at which arrangements were made for the provincial meeting.

⁂

Dr. C. W. Service lectured to the graduate nurses, Manitoba, on the need of medical, dental and nursing service in China.

⁂

Thieves entered the office of Dr. H. C. Skinner, Guelph, Ont., and took precious metals to the amount of five hundred dollars.

⁂

Dentists who meet and agree among themselves to advance their charges, with penalties for violations, are sailing close to a violation of the law.

⁂

The official opening of the Royal College of Dental Surgeons took place on May 6th at which Hon. Mr. Grant, Minister of Education, spoke.

⁂

The C.A.D.C. in St. John, N.B., area have been demobilized. Among these officers are Captains A. R. Currie, F. A. Godsoe, W. R. Wilkes, B. Rommel, and J. A. LeBlanc.

⁂

Dr. B. W. Brock, who has been engaged in the dental services of the C.E.F. for the past four years, has resumed practice at his office, 4180 St. Catherine Street, Montreal.

⁂

April 10th, 1920, the following members of the C.A.D.E. were demobilized: Capt. L. D. Steel, Capt. Ross; April 28th: Capt. Mounteer, Capt. Munroe, Capt. Caldwell, Capt. Bricker, Capt. Alexander.

⁂

Drs. Tucker and Addison were appointed to the Public School staff in the Department of Health. Mayor Church objected to any appointee who had not seen service in France, but when it was explained that only eleven dentists out of one hundred and three from M.D. No. 2 reached France further objection was waived.

Mr. Wardrope, K.C., in an address to the Ontario Dental Society, said: "Work is the proper aim of the true citizen, and the reward of work is secondary. The first duty of you dentists is to cure your patients, and if you think of your fee first, you are Judas Iscariots. We look upon him as one of the worst types of men, yet how many profiteers of to-day would have the grace to go and hang themselves?"

⁂

Dr. Arthur Smith has recently given a special course on Anaesthesia in Calgary to the following dentists: Drs. Harwood and Irwin, Moose Jaw; Drs. Moore and McDonald, Medicine Hat; Dr. Summer, B.C.; Capt. McIntyre, C.A.D.C.; Dr. Beddingfield, High River; and the following Calgary dentists: Drs. C. B. Johnston, E. H. Simmons, J. W. Clay, E. M. Doyle, J. I. Kelly, L. A. Maxwell, W. A. Piper, H. G. Robb, G. R. Ross, H. W. de Renzy, Herbert W. Wright and Dr. Rena Stillman.

⁂

Major Magee, who has been director of dental services for this province is at present winding up affairs in connection with it, and so soon as this is done the dental offices at the armory will be closed and the central dental clinic will be the only one in operation. Arrangements are also being made for dental officers in other districts and it is understood that each fair-sized town in the province will have an officer appointed to look after dental treatment for returned soldiers in that district. The military dentists will look after the "fag-ends" of the military dental work and the D.S.C.R. will look after all treatment for men in the vocational schools while the hospitals will have their own arrangements.

⁂

In the St. John, N.B., "Telegraph" of May 3rd, we notice the following:

Colonel B. L. Neily, dental director for B. and K. units (New Brunswick and Nova Scotia) was in the city yesterday in connection with the establishment of a central dental clinic for this district, in the old military pay office, Bank of Montreal building. This central dental clinic will be in operation very soon and will be under the direction of Captain F. A. Godsoe, who will have associated with him Captain Wilkes and Captain LeBlanc, both of whom were at one time in the dental clinic at the armory.

ONTARIO DENTAL SOCIETY STATEMENT
1918-1919

Balance on hand	$967.32	
Interest accrued but not to hand with above balance	12.00	
Registration fees	2,960.00	
Exhibits	497.00	
Railway certificates	26.00	
Returned by Dr. Kennedy from Entertainment Committee	4.00	
Interest to Nov. 1st, 1918	1.69	
Interest to May 31st, 1919	12.51	
		$4,481.27
EXPENDITURES.		
Dr. Bothwell, Secretary's expenses	$ 50.00	
Oral Hygiene Committee grant	300.00	
Detroit Clinic Club, expense and honorarium	500.00	
Hamilton Clinic Club, honorarium and expense	150.00	
Dr. Howe, expenses	180.00	
Gratuity to Central Y.M.C.A.	250.00	
Dr. Ante, expense of Clinic	100.00	
Dr. Price, expense of Clinic	40.00	
Entertainment Committee	125.00	
Publicity, per Mr. Shipman	200.00	
Badges, Thos. Wilky	42.84	
Exchange	22.23	
Railway certificates	26.75	
Guests hotel expense, luncheon tickets	113.45	
Tipping, postage, clerical assistance	68.28	
Programme Committee expenses	93.13	
Printing	218.45	
Sundries	31.05	
		2,511.58
Balance in bank		1,969.69
Total		$4,481.27

FOR SALE—Good dental practice in live city in Manitoba. Large rooms, good light, cheap rent. In best location in the city. Reason for selling enquire of the Temple-Pattison Co., Toronto or Winnipeg.

Dominion Dental Journal

Vol. XXXII. TORONTO, JUNE 15, 1920. No. 6.

Original Communications

PATHOLOGICAL HISTOLOGY AND TREATMENT OF GINGIVITIS

Harold Keith Box, D.D.S., Toronto.

Read before Ontario Dental Association, May, 1920.

Every periodontist must of necessity be an expert dental diagnostician. His duty to his patient is twofold. He must diagnose the dental and periodontal lesions present and determine the prognosis of the case as it is affected by these conditions. He must also diagnose these lesions in their possible relationship to systemic disease and determine their prognosis in this respect as well.

The foundations upon which these conclusions must be based, is a knowledge of the normal and pathological histology of the parts. Gross lesions are merely a composite made up from microscopic detail, and the lesion as seen by the unaided eye means nothing unless the mind can interpret it in terms of the minute anatomy and pathology of the tissues involved. Upon this knowledge also depends the rationale of the treatment to be followed.

For the purpose of our present consideration, we may classify the gingival tissue as follows:—*Marginal gingiva, cemental gingiva, alveolar gingiva* and *areolar gingiva.*

The marginal gingiva is that portion of the gingival tissue which is not attached directly to the tooth surface. It forms, by its contact with the enamel, the gingival crevice. It is an extension from the cemental gingiva. The cemental gingiva is that portion of the gingival tissue which is attached to the cementum, and which does not overlie the alveolar process. The alveolar and areolar gingivae are the tissues overlying the alveolar process. The former has a dense, firm submucosa, while the latter has a loose, flexible submucosa.

The marginal gingiva consists of a body of connective tissue, chiefly of the white fibrous type, covered by stratified squamous epithelium. On the crevicular surface or that surface which forms the wall of the gingival crevice, this epithelium is thin, and when exposed to bacterial attack for any length of time, will be more readily invaded than will the thicker epithelium of the external surface. Moreover, it frequently exhibits structural breaks which permit direct bacterial invasion into the underlying connective tissue from plaques and other debris which may penetrate the gingival crevice.

The epithelium covering the external surface of the marginal gingiva is very thick and is invaginated by numerous finger-like extensions of connective tissue whose function is to give support to the epithelium and carry nutrient vessels. Each finger-like projection of connective tissue contains an arteriole and a venule, with a capillary loop at its outer extremity. In many cases the capillary loop has a very thin covering of epithelial cells, and is thus fairly easily approached by infection, especially if this infection is virulent enough to cause rapid breaking down of the epithelium.

Simple chronic gingivitis may affect both the marginal and cemental gingiva, or it may exhibit its principal manifestations in the marginal gingiva. In either case histological examination reveals practically the same changes in the marginal gingiva.

Clinically this type of disease reveals redness and swelling, shown chiefly in the marginal gingiva. This produces a more or less definite color line of demarcation between the marginal and cemental gingiva. The crest of the marginal gingiva is slightly thickened, instead of terminating in a knife-edge as in the normal tissue.

Seen under the microscope, marginal gingivitis presents a circulatory disturbance in the finger-like connective tissue projections, accompanied by a leucocytic infiltration, consisting chiefly of plasma cells with some polymorphonuclears, thus denoting a reaction of moderate grade. There is no loss of tissue elements.

Originating at the cemento-enamel junction and along the cementum for a short distance from this point, there arises a group of fibres which pass in a coronal direction throughout the body of the marginal gingiva. The function of these fibres is to maintain the marginal gingiva in a state of apposition with the enamel surface. Any vascular disturbance in this tissue will cause an increase in its fluid content, due to serous exudation into the lymph spaces. This hyperemia results at once in swelling. If the fluid is absorbed in a short time, little harm is done, but if it is retained for any length of time, it is taken up by the tissue cells. Retrograde changes then ensue, with a more decided swelling of the marginal gingiva due to the relaxation of all the tissue elements. Under these circumstances the tissue is readily lifted away from the enamel and is often spoken of as "spongy gums."

Hypertrophic Gingivitis.—This type of gingivitis presents a clinical picture of an enlargement of the marginal and cemental gingiva. When this progresses for any length of time, the hypertrophy is observed chiefly in the marginal gingiva. From the evidence revealed by the miscroscope, it is apparent that the type of the primary injurious agent, together with high resistance to infection, makes up a complex in which proliferation of the connective tissue cells proceeds more rapidly than the breaking down of the tissue elements.

The mucous membrane appears to be unchanged as a general rule, although in some areas the epithelium seems to project into the underlying tissue somewhat farther than in the normal. The bulk of the hypertrophic mass is made up of fibrous connective tissue, the bundles of which seem to form trabeculae, which ramify in all directions. Many of the blood-vessels are dilated. In the tissue spaces around the blood-vessels and between the bundles of connective tissue, the cellular elements are very greatly multiplied. The predominating feature is the large number of plasma cells.

When traumatic occlusion is present as an etiological factor, there is, in addition to the circulatory disturbance of the marginal and cemental gingiva, an absorption of the crest of the alveolar process. Clinically this frequently results in recession of the gingival tissue, due to the withdrawal of its bony support at this point. Under the microscope, the action of the osteoclasts is seen to be chiefly on the side of the alveolar crest which is toward the tooth. In other words, that part of the alveolar crest which receives the brunt of the pressure is the first part to be absorbed. This absorption of the inner or tooth surface of the alveolar process may extend toward the apex without complete breaking down of the process. The result in such a case is an alveoloclasia, and the tooth is more or less movable in its socket. Whether the absorption involves the inner wall of the alveolus, or whether it is confined to the alveolar crest, there is circulatory disturbance set up in the adjacent pericementum and cemental gingiva which is reflected to the marginal gingiva. The resulting tissue change in the marginal gingiva is the same as in those cases of gingivitis in which the factor of traumatic occlusion is lacking. The important thing to keep in mind is, that this circulatory disturbance when caused by traumatic occlusion, may take place without any decided primary injury to the marginal gingiva. Also the relief of the traumatic occlusion will bring about an improvement in the gingival circulation even when the other gingival irritants are left undisturbed.

Treatment.—There is an idea very firmly rooted in the mind of the dental practitioner, that treatment of any form of peridontoclasia consists of scaling and polishing the teeth and then applying some sort of stimulating, antiseptic medicament. This idea is based upon an incomplete knowledge of pathology and etiology. But even with the discovery that local factors other than unsanitary concretions or projecting crown bands, etc., enter into the etiology of many cases, the old idea of treatment still prevails, so that when the patient with a case of periclasia of whatever type, sits in the chair, the dentist automatically reaches for his set of scalers.

While sealing is usually an essential part of treatment, yet it is a fact that other operations enter into the complete treatment of nearly every case. The reason is, of course, that the object of treatment is to remove the causes of disease, and if scaling will remove only one cause, other forms of treatment must be utilized to remove the other causes. These statements are so self-evident as to sound inane. Yet it seems to be necessary to introduce the subject of treatment in a manner which will emphasize this point.

Treatment not only requires the elimination of each etiological factor present, but the best results are to be obtained when the elimination of these factors are carried on in sequence of their pathogenic influence.

If traumatic occlusion is present, it is nearly always the factor of greatest influence. The best results will therefore be obtained by relieving this factor first. The rationale of this procedure is that traumatic occlusion imposes an abnormal stress on the tissues whenever the jaws are closed or used in mastication. There is a constant condition of overwork. Under such circumstances the imperative necessity is for physiological rest. When this is obtained, the circulation has a definite tendency toward the normal, and tissue tone begins to improve. The result is, that when the scaling and polishing are finally done there is a sharp biogenetic response on the part of the rested tissues and repair is more rapid and more complete than when the scaling is done first and the relief of occlusal trauma follows it.

The treatment of hypertrophic gingivitis is based upon the same plan as is the treatment of other types of gingivitis. Traumatic occlusion, if established as a factor, is to be corrected first. Following this comes the removal of serumal calculus and other mechanical irritants. Attention is called to the fact that excision of the hypertrophic tissue is seldom indicated. And if it is required, it should only be performed after the other treatment is completed.

It is surprising how great a reduction of hypertrophied gingival tissue will take place when the causes of this disease are completely removed. However, early and repeated excision of this tissue may only bring about an extension of the morbid process into the deeper alveolar structures.

But there is another reason for starting treatment by the relief of traumatic occlusion. It is frequently difficult to determine definitely whether this condition has been relieved for all the positions in which the patient may place the mandible during the mastication of food. By correcting the occlusion first, the improvement or lack of improvement as shown by the color changes, and other symptoms in the marginal gingiva, will usually indicate definitely whether the condition of trauma has been eliminated, or whether it is still present. When the scaling is done first, or at the same time as the correction of the occlusion, the response to this operation is usually sufficiently marked to obscure the depressing influence of a continuing trauma. It is not to be understood that the ordinary sanitation of the mouth is to be completely disregarded at this period of the treatment. But the operator should not at this point attempt a complete scaling operation, unless the element of occlusal trauma is definitely absent.

The bacterial element in etiology is usually of secondary importance. In the chronic types of gingivitis, the natural immunity of the tissues is usually sufficient to cope with the bacteria which have invaded these tissues, when once they are free from mechanical irritation and have been stimulated by proper toothbrush massage. The bacteria which have penetrated the tissues are beyond the reach of germicides, etc., and the bacteria outside of the tissues are best eliminated by their mechanical removal from the tooth and the gingival surface. There is little need for medication in the properly cared for mouth. However, in phagedenic gingivitis or Vincent's infection, the bacterial element, by reason of its virulence, becomes the predominating etiological factor. It may demand attention even before the relief of traumatic occlusion. The medication is important, since bacterial proliferation must be checked. And in these cases the complete mechanical removal of the bacterial masses is unsafe during the acute stage of the infection.

Abnormal systemic conditions are secondary etiological factors also. They usually have little influence on the recovery of health in the gingivae. They should of course receive attention, since their elimination will benefit not only the oral condition but the general health of the patient as well.

In closing, it is only necessary to say that each case must be diagnosed as to the type of disease present, and the particular grouping of etiological factors it presents. A knowledge of the pathology of the type at hand will aid in an understanding of its requirements. With this knowledge, and a determination to succeed, the technique required in the management of these cases may be mastered by any competent dentist.

While the clinical picture may vary from case to case with the variation on the grouping of etiological factors, experience has shown that the predominating features in the majority of cases are traumatic occlusion and gingival irritants. The ability to recognize and eradicate these two factors will carry one far on the road toward the control of periodontoclasia.

DIAGNOSIS AND ETIOLOGY OF GINGIVITIS

JOHN OPPIE MCCALL, D.D.S., BUFFALO, N.Y.

Read before Ontario Dental Association, May, 1920.

Your essayist has chosen the subject of Gingivitis for consideration in this paper, for several reasons. The first is its very common occurrence in both old and young. The second is that gingivitis is very frequently a transitional lesion, tending to progress toward a deeper and more serious type of periodontal disease. The third reason is that it can usually be completely eradicated by the general practitioner, whereas the deeper lesions involving pocket formation, frequently can only be brought under complete control by the specialist in periodontia. The man who masters gingivitis has gone far toward eliminating all forms of periodontoclasia from the mouths of his patients.

To diagnose gingivitis and to differentiate it from other types of periodontoclasia requires first an understanding of the main types of periodontal disease.

Briefly these are as follows:—*Recession*—characterized by diminution in the bulk of the marginal and cemental gingiva and exposure of the cementum.

Gingivitis—characterized by redness of the marginal and cemental gingiva. In uncomplicated cases, there is no pocket formation and little or no pus.

Alveoloclasia—characterized by mobility of the tooth. In uncomplicated cases there is no pocket formation and no pus.

Pericementoclasia—characterized by pocket formation and usually a perceptible amount of pus. Cases having pericementoclasia may also show recession, gingivitis and alveoloclasia, in varying combinations.

Periodontal abscess, which is not of pulpal origin, may also occur, but is comparatively rare.

Gingivitis in the pure type is an inflammation of the marginal and cemental gingiva. It may be complicated by the presence of recession or alveoloclasia. If pocket formation has occurred, it is diagnosed as pericementoclasia rather than gingivitis. Thus in making an examination the presence of redness of the margin of the gingiva establishes the diagnosis of gingivitis, while the absence of pocket formation is disclosed by exploration with a blunt probe under the gingival tissue.

There are several types of gingivitis, but differential diagnosis is usually unnecessary except for that form to which Stillman has given the name "Phagedenic Gingivitis." This is colloquially known as trench mouth. It is characterized by considerable pain, fetor of the breath, spontaneous hemorrhage, and the formation of a greyish-white ulcerous conglomerate on the crest of the marginal gingiva. We will here deal only with the chronic types of gingivitis.

Etiology.—The etiology of chronic gingivitis consists primarily of traumatic occlusion, irritating concretions on the tooth surface, contact of fillings, crown bands, etc. Bacterial invasion, unfavorable systemic condition, organic inorganic poisons are secondary factors.

In gingivitis as in other forms of periodontoclasia, the cause is always compound. That is, it requires the combined action of two or more etiological factors to produce a case of gingivitis recognizable clinically as such. Thus the presence of salivary calculus seems to produce gingivitis in one case and not in another. The discrepancy does not lie in the question of whether salivary calculus is a cause of gingivitis, but in the presence or absence of associated factors which combine with it to produce tissue change.

It is to be expected that the nature of the causative agency will have considerable influence not only on the type of the lesion but also will determine to a large extent its probable course and termination. And investigation of cases shows this to be a fact. We might almost classify these cases by the etiological factors present, and by so doing, predict, with great accuracy those cases which would terminate in pocket formation and those cases which would remain as gingivitis only.

When traumatic occlusion is present as an etiological factor, gingivitis will be observed as a step in the progression of events having a definite tendency toward pericementoclasia. Because of this tendency, every case of gingivitis is to be examined rigidly for the presence of this factor, as the most important prophylactic measure against subsequent loss of alveolar support. It should be noted, however, that traumatic occlusion may be present and pocket formation may take place without the previous occurrence of a typical gingivitis. All mouths should be examined for pocket formation, therefore, whether they exhibit inflamed gingivae or not. When traumatic occlusion is present, there is usually some tenderness of the tooth to percussion, or a greater or less degree of conscious discomfort. This discomfort is not always localized definitely in the gingiva, but may be so vague that the patient comes to the conclusion that there must be an approximal cavity; or that there is food crowded between the teeth. Thus it frequently leads to the formation of a toothpick habit, which is of course an added as well as a more obvious irritant.

Traumatic occlusion produces an injury to the entire pericementum, with a tendency, however, to exhibit the severest symptoms in the region of the crest of the alveolar process. The vascular derangement which it produces is thus most markedly exhibited in this region, and a capillary engorgement of the marginal and cemental gingiva is the natural sequel. It is of the first importance that traumatic occlusion if present, be recognized and corrected, since otherwise the case will almost inevitably terminate in pericementoclasia with its attendant pocket formation and the possible final exfoliation of the tooth.

Nature is always on the alert for the removal of any form of irritation, and moreover exhibits a decided reparative reaction after the performance of any surgical operation, even if incomplete. Hence we frequently see an improvement following the scaling and polishing of the teeth, even when an uncorrected traumatic occlusion is present as a factor in the case. Also the scrupulous and vigorous brushing of the teeth may produce a stimulation sufficient to keep inflammatory symptoms at a minimum. Nevertheless, if traumatic occlusion is present, recession, pocket formation or alveoloclasia, one or all will slowly but surely undermine the periodontium before the very eyes of the dentist.

In many cases the detection of a slight traumatic occlusion may be difficult. And it is certainly highly improper to grind any tooth without evidence which will show the need for that operation.

The presence of traumatic occlusion is to be strongly suspected if the case, after the correction of other etiological factors, fails to show improvement, or if it exhibits an improvement followed by an early relapse into an inflammatory condition.

The presence of traumatic occlusion is to be expected when the inflammation is not readily accounted for on the ground of other mechanical factors, such as calcareous deposits of long standing, edges of fillings, etc. It is necessary to study the hard deposits on the tooth surface, to determine whether they are primary, that is salivary precipitates, or whether they are secondary, that is serumal deposits. Salivary deposits in themselves produce comparatively little irritation unless left in contact with the gingival tissue for a number of years, although granules of salivary calculus left by careless scaling operations are highly irritating. Serumal deposits, while irritating in themselves, have their chief significance in the fact that they are formed as the result of capillary stasis and diapedesis. They are not formed, in other words, except as the result of an injury which has produced a circulatory disturbance. Salivary calculus is not likely to constitute a primary injury except on the lingual surface of the lower anterior teeth, or the buccal surface of the upper molars, unless the mouth gives evidence of long continued neglect.

Gingivitis when not readily explainable by the presence of primary salivary calculus, or other mechanical factors, is therefore usually to be considered an indication of traumatic occlusion.

Salivary and serumnal calculus, rough or etched enamel, margins of unfilled cavities which extend below the marginal gingiva, are etiological factors of importance, as are also soft deposits, particularly decomposing food and mucinous secretions. They are readily diagnosed, particularly if they are stained with Skinners' Disclosing Stain.

Food impaction, occurring as a result of faulty contacts, is a factor in gingivitis. Food impaction occasionally is due not so much to a faulty contact as to the wedging apart of the teeth by an opposing cusp. In such a case, the real offender is not so much the impacted food as the traumatic occlusion, which is responsible for the constant opening up of the contact. This is most frequently observed between the two last molars, especially on the upper jaw. Edges of fillings, and of crown bands, are very obvious irritants. Here again, however, the gingivitis may be only partly due to the edge of the restoration. An improper restoration of the occlusal surface of a filling or crown may produce an occlusal trauma, which is a more active gingival irritant than the metal which protrudes into this tissue.

Impaction of food on the gingival tissue is usually due to faulty contacts between approximating teeth. The same effect may, however, be produced by the crowding of food against labial or lingual gingival tissue due to excessive ''overbite'' of the teeth or due to lack of protective contours of the tooth surface just above the marginal gingival. In either case the gingivitis is apt to be complicated by recession. There is considerable discomfort. Pocket formation, however, is rare, contrary to the usual views on the subject of faulty contacts, unless there is a coincidental occlusal trauma. And incidentally, if there is a traumatic occlusion, pocket formation will take place, even if the contacts are perfect.

The bacterial element is a variable one in cases of gingivitis. At the one extreme we have the virulent fusiform bacillus and spirochaete of Vincent attacking normal or nearly normal tissues and producing a severe ulcerative type of lesion. At the other extreme we find cases in which high tissue tone, scrupulous cleanliness, and stimulation by toothbrush massage, combined with a bacterial flora of low virulence, produce a lesion in which the usual inflammatory symptoms are subdued or seem altogether absent. These latter cases usually exhibit a recession if traumatic occlusion is present; if it is absent, they usually tend toward a hypertrophic gingivitis. This latter distinction is not invariable, however, since traumatic occlusion is frequently a factor in the production of hypertrophic gingivitis.

The products of intestinal and gastric aberrations have been much overrated in the past as etiological factors in gingivitis. The typical intestinal gingivitis is usually seen only in mouths of convalescents from an illness which has perceptibly altered enteric habits. These cases are also complicated by lack of complete oral cleanliness during the illness. Intestinal disorders, and specifically substances absorbed from the intestines into the blood stream, are of course a factor in many cases. This may be demonstrated by the partial improvement which follows the use of saline laxatives, and a restricted diet. Other systemic abnormalities and diseases originating outside the mouth, exert a similar influence. These things are not inaugurating causes of gingivitis, and the improvement gained by eliminating them is never complete unless the mechanical factors present are also eliminated.

Mercury and other poisons are seldom taken into the system at the present day in sufficient amounts to produce marked gingival inflammation. Even when they do act upon these tissues, they are usually secondary to the mechanical factors present.

Many other factors might be mentioned which play a more or less important role in the causation of gingivitis. But to catalogue and describe them might only lead to confusion.

The important facts about the etiology of gingivitis are: First, that two or more causative factors must act in combination to produce gingivitis as well as other forms of dental periclasia. Second, that the results of treatment are successful or not, according to the completeness of the removal of these factors. Third, that when traumatic occlusion is present as a factor, the gingivitis has a definite tendency to progress to pocket formation. Fourth, that when a case of gingivitis of long standing shows no pocket formation or looseness of the teeth, then, and then only, can we be reasonably sure that there is no traumatic occlusion in that mouth.

In closing it should be emphasized that gingivitis is nearly always amenable to treatment by the general practitioner, since it does not present large areas of denuded but invisible cementum requiring surgical treatment, with the necessity of a highly developed technique and large assortment of instruments. It should also be emphasized that the general practitioner and not the specialist is usually the first one to see the case of gingivitis. The responsibility for its resolution or retrogression, therefore, belongs to him. With that responsibility goes, however, the knowledge that gingivitis, through the thorough understanding of its etiology now available, offers greater opportunity for success in treatment than is to be found in any other field of dental or periodontal pathology.

DENTAL PSYCHOLOGY

H. H. Hepburn, M.D., C.M., F.R.C.S., Edinburgh, Scotland.

Read before the Edmonton Dental Society, April 6th, 1920.

Mr. President and gentlemen,—I am not going to read a brilliant and scientific paper, but I hope that an analysis of a few of the everyday events in the life and practice of a dentist may be interesting or amusing, if not instructive.

The human race, like the individual, is, to a very great extent, subject to the influence of suggestion. Consequently in the dental, as well as other professions, it behooves one to bear in mind that the race is fickle, and subject to the whims of fads and fashions, just like the individual. Also in dealing with an individual it is well to remember that he or she is simply an epitome of the species. The man who makes a success in either the professional or the business world, is that man who studies mankind and builds up a thorough understanding of what is termed "mass psychology." One who concentrates wholly upon the individual, and forgets that this individual, even though it be his best patient, is only a unit, is likely to lose his sense of perspective, and by the narrowness of his views defeat his own ends.

It was only during the last generation that dentistry became really fashionable. Various phases of dentistry have, and will, become "the vogue," and in turn give place to other vogues, as the science progresses and environment changes. The dentist who foresees the inevitable fall, when modes of treatment, such as root-filling, crown, and bridge work, etc., are tottering on their pedestals, and adapts himself accordingly, is the one who is going to be always on the crest of the wave.

Just as man is said to be the architect of his own fortune, so is he to a great measure responsible for his own reputation. The public is not slow in classifying dentists in accordance with its impressions. I doubt if there is a dentist in the city who is not referred to in common conversation, by the public, as a rough, or gentle, careful, or careless dentist. They may even go so far as to say that he is expensive but good, or that he is cheap. Consequently, it behooves any professional man to be careful of the impressions he gives to the public.

Many men enter into the practice of general medicine with a profound contempt for the business aspect of it, and many a man has blighted his own hopes and damned his prospects before he realized the necessity and importance of business methods in his practice. The disillusioning of these philanthropic enthusiasts is often a painful shock. One would not expect this to occur so frequently in the experiences of dentists, at least I hope not. Nevertheless I gather from public comments that there are a number of dentists who are not considered to be good business men. Doctors and dentists are openly accused of encouraging dishonesty by carelessly neglecting to collect fees from the patient who tries to shirk payment, and of unfairness in charging the aforesaid fees indirectly to the accounts of the conscientious patient who is honorable enough to pay his debts. This is admittedly bad business, to say the least. The standardization of fees should mean equalization of work. The business motto of "small profits, quick returns," does not obtain in the practice of any branch of medicine. In dentistry, it is liable to necessitate an excessive amount of hurried work, and sacrifice quality to quantity, the result being a quick return of the patient, possibly to another dentist who charges higher fees, sees less cases, gives more time and personal attention to each one, and consequently gives better satisfaction. A person gets a lot of satisfaction out of showing a good piece of dental work to friends and telling how much it cost him. At the same time, he would not hesitate to show a "rotten job," and tell how much Dr. So-and-so "soaked him," even though he may have gotten his cheap work at a cheap price. The public is inclined to take any man at his own valuation, at least until it "finds him out." Most men, as I have already intimated, make their own reputations, and when it chances to be an unsavory one, it is the rule to put the blame on the public and the profession.

A few words now about the prospective patient. Why has the average person such a horror of dentists' chairs and paraphernalia? Very largely because, in days gone by, before the development of prophylactic dentistry, a patient only came to a dentist for the relief of an acute condition, the treatment being an extremely painful extraction. These people who had suffered at the hands of a dentist had great sympathy for everyone else who had had a similar affliction. They developed a sort of free-masonry of heroic martyrs, the chief obligation being to instill into the hearts of mankind a profound dread of all things dental. So that until quite recently one was almost ashamed to confess that he had not been caused to suffer unspeakable agony in the dentist's chair.

Dentists themselves have been guilty of aiding and abetting this evil impression in two ways. Firstly, by deceiving the patient, saying, "It will not hurt at all," and then proceeding to demonstrate the contrary. Children especially do not forget these deceptions readily, and are liable to entertain distrust forever after. Secondly, to gratify the expectations of the patient, he is tempted to exaggerate the difficulty of the case, and flatter the patient on his display of courage. There is no doubt that a person likes to tell in public that his tooth was the worst that Dr. So-and-so ever had to pull.

Preventive dentistry is doing a great deal towards the abolition of this prejudice by getting the patient acquainted with dental paraphernalia before he develops an acute and painful lesion.

Mention of pain brings up the question of nervous mechanism. The nerve of interest to the dentist is the fifth or trigeminal. The small motor root of this nerve, arising from cells in the pons, may for present purposes be passed over. The sensory fibres arise from nerve cells in the semi-lunar ganglion (gasserian). The gasserian ganglion is analogous to the ganglion found on the posterior or sensory root of every spinal nerve. Its cells give rise to a neuron which divides into two branches. The ascending branch of the neuron enters the substance of the pons on its lateral surface. These neurons together making up what is called the sensory root. After entering the pons these neurons diverge very widely, arborizing about brain cells in the trigeminal nucleus, which is the most extensive nucleus of all the cranial nerves. The main portion of the nucleus lies in the middle of the pons, well towards its dorsal surface, beneath the upper half of the floor of the fourth ventricle. Fibres can, however, be traced upwards to the top of the mid-brain, and downwards in the medulla as far as the level of the second cervical nerve in the spinal cord. It will be seen from this anatomical arrangement that the centre for this nerve is in proximity to the centres of all the other cranial nerves. I will refer to this point later on. The descending branch of these neurons bundled together as uninterrupted fibres form the three sensory portions of the fifth nerve. The sensation of pain is brought about by a disagreeable stimulation of a sensory nerve terminal in a tooth.

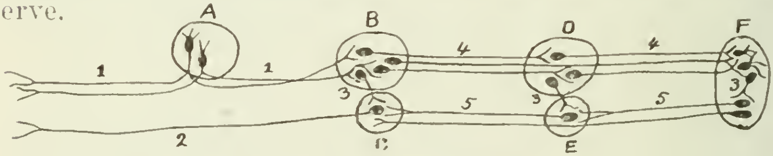
The impulse passes up the nerve fibre to the brain cells, in the centre for this nerve, the impression received is symbolized as pain, and an efferent impulse, or message to that effect, is transmitted to associated centres. This is the process by which reflex actions occur, which is nature's method of protection against further injury. One theory is that the afferent impulse travelling up a stimulated nerve is in the nature of an electrical current brought about by chemical action in the nerve cell. It is held that when the stimulation is weak, a small amount of bio-chemical action takes place, a small amount of this electrical current is produced, and a small amount of pain is felt. Stronger stimulation produces a correspondingly greater amount of pain. Furthermore, it is argued that if this current becomes intensely strong and is continued, an accumulation of electrical energy occurs, just as a current can be accumulated in a Leyden-jar in the laboratory, or in a storage battery. If this theory be the true explanation of nerve action, then the continuation of a pain long after the cause has been removed, is easily explained. Also, it is thought that when charged past their limit of capacity, the cells of one centre may overflow, allowing the current to flow into the cells of an adjacent centre. This would explain the feeling of pain in parts supplied by entirely separate and unstimulated nerves. It is for this reason that the widespread nucleus of the fifth nerve, to which I have referred, is to be remembered. An overflow from its nucleus might stimulate any other cranial nerve centre, and so excite symptoms which might mask the original lesion, and suggest an incorrect diagnosis. Certain constitutional disturbances which are put down to toxaemia from bad teeth may possibly be due, in part at least, to reflex action upon other nerve centres.

Whatever may be the true explanation of pain, I am convinced that there is no such thing as "imaginary pain." There may be no demonstrable organic lesion to account for a pain, in which case it is the cause and not the pain that is imaginary. Patients who have suffered from a functional pain and recovered will testify that, although of imaginary origin, a functional pain is just as acute and real to the sufferer as though it were of organic origin. A very small cause may, in the presence of a hyper-sensitive nervous system, produce effects which in a normal individual would be considered out of all proportion. Each person's nervous system is a law unto itself, although people do fall more or less into groups or types. What would be the cause of slight discomfort to a dull, lethargic type of person, might cause excruciating pain to a highly-strung, neurotic person. Even suggestion may cause pain, as is well known. Similarly, suggestion may relieve real pain, as is frequently seen in a case of a violent toothache being abolished on the patient entering a dentist's office. In such a case no doubt the painful afferent impulses are still passing to the brain centre, since nothing has been done to arrest them. The fright induced by the sense of impending ordeal is in some way capable of preventing the recognition of these impressions. An attempt is made to explain this by an assumption that there are really two closely related centres involved in each case, one for the reception of impulses, called the "receptive centre," and one for the normal reaction, called the "reactive centre." Working on this hypothesis, it is assumed that the reception of a second and more powerful impulse may interrupt the course of impulses between a receptive and reactive centre. It may be that the impulse is completely arrested and no pain is felt, or it may be, as in the case of hysteria, shell-shock, etc., that the pain is exaggerated or even perverted, so that an entirely different sensation is felt.

This arrangement of the centres may explain why a dental lesion frequently produces symptoms suggesting other lesions, and account for the remarkable improvement in headache, loss of memory, loss of smell, impaired vision, etc., which follows the correction of a dental defect.

Diagram of Nucleii, Nerve Cells, Motor and Sensory Neurons.

Motor and sensory neurons bundled together form a mixed nerve.



A—Semi-lunar (gasserian) ganglion.
B—Sensory nucleus in the pons.
C—Motor nucleus in the pons.
D—Sensory nucleus in the thalamus.
E—Motor nucleus in the thalamus.
F—Sensory and motor nucleii in the brain cortex.
1—Lower sensory neurons.
2—Lower motor neurons.
3—Association fibres or neurons.
4—Upper sensory neurons.
5—Upper motor neurons.

B-C, D-E, and F are the places where overflow of impulses might take place.

TOOTH ROOT RESECTION

C. H. Avery, Toronto.

INTRODUCTION.

Tooth-root resection is the part of dental science which deals with the cutting off, or amputation, of part of the root of a tooth or a calcified portion, which may be strongly attached to the root. The term root resection was first suggested by Dr. Thomas L. Gilmer.

THE ADVISABILITY OF ROOT RESECTION.

The advisability of such an operation is indicated in certain cases of chronic alveolar abscesses, but should be done only as a last resort, as the abscess will always be complicated, else it would yield to the different treatments now in practice for chronic alveolar abscesses. In every case other treatments should have been already tried before resection of the root is ever contemplated. It is also advisable to confine the practice of root resection to the following teeth, namely, the upper incisors, cuspids and buccal roots of first bicuspids and upper molars. In the cases of the above-mentioned teeth the process and depth of bone is not very great and good results can usually be obtained. With the other teeth there is a much greater depth of bone and surrounding tissues to be penetrated. This makes the operation a much more difficult one; and even when a good operation has been performed the result in most cases is usually unsatisfactory.

CASES OF ALVEOLAR ABSCESSES INDICATING ROOT RESECTION.

As mentioned before, the advisability of tooth resection is only with the upper incisors, and is indicated in certain cases of chronic alveolar abscess involving the roots of these teeth. It is necessary then to know the conditions, or the effects produced by them upon the root of the tooth and surrounding tissues which would indicate resecting the root. In all cases where an operation is indicated, complications will be present and the ends of the periapical tissues are seriously involved. The abscesses are of several forms and usually have specific causes. In cases where the abscess is not well drained during the acute stage there is naturally more danger of destruction occurring in the apical fibres of the peridental membrane. In cases where dead pulp remains in the tooth after an acute alveolar abscess, a chronic abscess will be maintained by the discharge of infectious material through the apical foramen. If in such cases no serious injury has occurred to the peridental membrane up to the time when the case presents itself, the proper treatment and filling of the root canal will usually effect a cure. On the other hand, if the periapical tissues are destroyed by the acute abscess, or if from the resultant infection of the root canal the fibres have been destroyed the abscess can never heal so long as that condition of detachment remains. If the periapical tissues are destroyed by drugs—the result of strong drugs destroying the tissues—the abscess can never heal. In all cases then where the tissues are destroyed or become detached and the detachments are permanent, a chronicity is maintained and the case continues as a chronic abscess even though the pulp may be removed and a good root canal filling made. The denuded portion of the cementum of the tooth acts as a piece of dead bone and offers all resistance to healing. When this condition is present the abscess can only be cured by resection of the root, or by extracting the tooth. This same applies to cases where the cementum has lost its attachments to the surrounding soft tissues and become pus soaked. This pus soaked cementum can only be loosened from its attachment to the root by absorption, for neither the cementum nor dentine have power to produce an absorption that would loosen such a bit of necrosed bone or tissue, because they have no circulation of red blood cells nor living elements that can perform such an absorption. Therefore it becomes a permanent interference with the healing progress and can only be cured by root resection or extraction. The most important thing to learn previous to undertaking treatment should be the extent of the detachment of the peridental membrane from the cementum about the apex of the root.

EXAMINATION AND DIAGNOSIS OF THE CASE.

A thorough examination and diagnosis of the condition of the tooth should be made. This may be done in most cases by the use of an x-ray machine. There will be sufficient destruction of bone and tissue about the apex of the root to be definitely shown by a good radiograph. A very difficult complication to diagnose and treat occurs where the abscess is on the root and the end of the root is encysted from deposits, excementosis or other causes. This may be cured by resection. There are many cases in which a sharp steel probe or curetting instrument will be sufficient to indicate and satisfy the operator that the root is denuded. However in all cases in which an effort is to be made to save the tooth by resection of its root, a radiograph should be obtained. The location of the apex of the root should be noted from the radiograph so that the location for the incision may be properly chosen by the operator.

TREATMENT PREVIOUS TO OPERATION.

After having made a clear diagnosis of the condition of the abscess, and if much of the root is found to be denuded, no effort, of course, should be made to save the tooth unless amputation of the denuded portion is contemplated. The root canal now requires treatment before the operation. Of course, as stated in the first paragraph, root resection is a last resort and this treatment will have been already done. It consists of thoroughly cleansing and a subsequent filling of the root canal.

FILLING OF THE ROOT CANAL.

There are so many different ways of filling root canals and there seems to be such a variance of opinion as to the best method in practice that no one method can be chosen as such. There are, however, three factors which must be borne in mind in the filling of root canals generally, namely, first, re-establishment and maintenance of asepsis; secondly, the preservation of the color of the tooth, and, thirdly, thoroughly filling the canal. In filling large canals, especially those in connection with which abscesses have been treated, where the apex is large, and where we ought not to expect to get a response from the patient when the gutta percha cone reaches the apex, on account of the absorption in the apical area, it is best to measure the canal and then use one which approximately fits the canal rather than use two or three smaller ones with the possibility of forcing one through the apex and into the apical area. To measure the canal, cotton may be tightly wrapped around a smooth sterile broach and inserted. When, by repeated trials, the cotton fits the canal, a cone can be made of white base plate gutta percha which is slightly smaller than the tightly wrapped cotton. The canal should now be moistened with modified eucalyptol, flooded with white chloro percha working the latter up and down into the canal with a fine smooth broach, exhausting the air. If cotton is wrapped around the broach used for this purpose, only a few shreds should be used as the air will not be as readily exhausted. If the pulps have recently been removed the patient will usually flinch before the cone reaches the apex. When this occurs the operator should wait a few minutes when the cone can be gently placed or pressed much farther without causing the patient any more pain. In filling all canals where we can enter nicely with a smooth broach it is best to follow the technique already outlined using a cone which will enter the canal. However, in the case of molars the canals are so tortuous that even a fine broach will not enter to any depth. It is useless to try to fill these with a gutta percha cone. The methods of enlarging the canals by the use of acids and caustics may be used with the destruction of pulp tissue. If the canal cannot be enlarged by the use of acids or caustics, it is good practice to make a paste of formocresol and precipitated calcium phosphate, placing the paste over the mouth of the canal and covering it with cement. However, if the canal can be enlarged a small cone can be admitted. The canals are moistened with a modified solution of eucalyptol and chlora percha worked up or down into the canal. This process should be kept up for some time, until the choloroform has nearly all evaporated leaving the gutta percha quite plastic. The sides of the pulp chamber can now be moistened with modified eucalyptol and a piece of base plate gutta percha selected and softened in the flame can be packed into the pulp chamber when pressure can be made towards the small canals and the plastic gutta percha forced into them. In some cases of abscess after removing the dead pulp from the root canal and after a mild antiseptic dressing has remained sealed in it for a week, sometimes a second treatment is required. If pus still continues to come down through the canal it should be filled for the time being and then removed and treated or rather sterilized after the root resection has been done. In all cases where there is a sinus present it should be enlarged. However, this will be described under technique.

TECHNIQUE OF OPERATION.

The technique of the operation requires the most aseptic measures. The hands of the operator should be sterilized. There are many ways of doing this. After a thorough scrubbing and manicure the operator should dip his hands in a ten per cent. solution of bi-chloride of mercury. The instruments and burs used should also be thoroughly sterilized. Before operating, of course, as described previously, the root should be filled and a thorough exploration made and the amount of process and root involved noted. The following technique for operating is that used by Dr. Thos. L. Gilmer, whose work in resection has been of great benefit and credit to the dental profession. A local anaesthetic is injected deeply into the tissues surrounding the tooth and a circular incision made. The opening is now packed with gauze dipped in a 1.1000 solution of adrenalin chlorid for a few minutes. With a spear shaped drill a hole can be made through the centre of the root, and a bibevelled drill may be used to cut away sufficient of the bone to give access to the apex of the root, except in cases where there is enough of the bone already destroyed. When the root is exposed it may be cut off by using a fissure bur in the hole already made by the spear or bibevelled drill. The fissure bur is not satisfactory for making the hole as it quickly fills with the cuttings and becomes clogged. The fissure bur is worked mesially and distally in the hole until the end of the root is cut off. It is often difficult to remove the end after the incision is made and this may be done with a strong hatchet or hoe excavator, an elevator and sometimes with beaked root forceps. After removing the excised end the remaining root should be smoothed with a round bur and the area thoroughly curetted, removing any necrosed bone which may be present. The wound should now be washed with an antiseptic solution and packed with sterile gauze. Dr. Buckley advises the use of plain aseptic gauze saturated with a paste made of a mixture of orthoform and europhen, using liquid petroleum as the vehicle. The exposed process and lacerated tissue is packed and covered with this gauze and paste, after which collodium may be placed over it to form a covering.

AFTER TREATMENT AND HEALING.

The patient should be instructed to keep the mouth as clean as possible, and the packing should be changed every two days until granulation begins to fill in the space. In cases in which the cementum has been pus soaked from a denuded area, healing will be much longer and danger of reinfection much greater. In the other cases it is a matter of a few days at most until the root end is entirely closed within the tissues and completely shut off from the fluids of the mouth so that a reinfection is very much less likely to occur. There are three possibilities of healing—the tissues may attach themselves to the end of the root; the cementoblasts from the sides of the root may gradually build new cementum over the end, or the tissues may heal over the end of the root without being attached to it.

GENERAL RESULTS AND CONCLUSION.

All cases in which roots are resected should be carefully watched. There are a certain percentage of cases that do not do well, either due to a reinfection or an irritation sufficient to keep up a discharge and forming another pus pocket which remains around the end of the roots. The others, if no abscess re-occurs, do well, and the root is made healthy and the tooth gives service in most cases for quite a number of years. The cases should be watched, however, for sometime, and even if the tissues appear to be perfectly healthy an X-ray should be taken within a year or so to learn the condition of the tissues surrounding the apex.

Books consulted in preparing essay:

"Special Dental Pathology," by Black.

"Operative Dentistry," by Johnston.

"Materia Medica, Pharmacology and Therapeutics," by Buckley.

Dr. J. A. Bothwell,
Stratford, Ont.
President, Ontario Dental Association.

PULPLESS TEETH AND GENERAL HEALTH

Charles J. Kelly, D.D.S., L.D.S., Markdale.

Dentistry grew from nothing into a profession in less than eighty years. Within the last few years, nine or ten, we would say, dentistry has grown in importance from a profession thinking only of saving the masticating organs, to one which deals with problems in the mouth and about the teeth which have a vital bearing upon health, life and happiness of every person who comes into contact with his dentist. It has therefore changed from a profession of passing importance to one where the problems and thoughts connected therewith are of a serious nature, and to the degree in which these things have become serious, to that same degree should the dentist regard the problems which present and avoid their careless solution.

Why has such a burden of responsibility been placed upon the dental profession? Because it has been proven clinically that a great number of systemic ills that ravage the human race to-day are traceable to a foci of infection in the oral cavity. A great many of such foci (approximately 80 per cent. as claimed by authorities) have as their predisposing cause "pulpless teeth." By a "pulpless" tooth we mean one from which the "pulp" has been removed. Noyes says, "The vital function of the dental pulp is the formation of dentine, and this is performed by the layer of odontoblast cells. In this way the pulp provides for the nutrition of the tooth. These cells, also by means of their dentinal fibrils maintain the same relation to the dentive matrix that the bone and the cement corpuscles bear to the matrix of bone and the cementum." If Noyes be correct in his statement, then we must look upon a tooth from which the pulp has been removed with grave suspicion. Why? Because we can contrast a tooth in which the dentine has become dead to bone in which the corpuscles have been killed. The term "necrosis" is applicable in both cases. Upon the death of bone a sequestrum is formed which in time will be exfoliated. Not so with dead tooth dentine, because it is held closely in opposition by the enamel and the surrounding cementum, the vitality of which is maintained by the pericimentum, whence it draws its blood supply. This will not prevent, however, as Noyes has shown, the toxic products from the dead dentine or the live bacteria getting into the lymph channels and into the blood stream. If the surrounding pericementum is removed, or becomes infected, there is absolutely no hope of cure for the cementum. It is not like bone. It has no Haversian system, it is not vascular, it cannot heal itself, it cannot form a sequestrum. These facts are accepted as basic and beyond question by dental histologists, and are taught to us students at our school desks by our teachers.

From the above one can readily see that if pulpless teeth are to be retained in the mouth, the surgery of such must be faultless. Let us pause here a moment and discuss briefly the considerations of root canal surgery. It is absolutely essential that every particle of dead pulp tissue must be completely removed and the canal rendered sterile, under, of course, absolute asepsis. To the laity this does not convey anything out of the ordinary. To the dental surgeon the problem is gigantic. He knows well the pranks that nature plays with the anatomy of the teeth. In some cases the canals are very tortuous and are almost obliterated, due to secondary dentine, calcific pulp deposits, etc. Under the most favorable circumstances they are difficult enough to successfully perform root canal therapy in without the addition of these abnormalties. Apply a condition of this nature to a superior third or second molar, for instance, and the undertaking becomes gigantic. Also must all this be done under complete asepsis or the operation is a failure. Let us assume that strict asepsis has been successfully observed, the canals thoroughly opened up to the apex and the contents entirely removed. Let me add here, however, that I have granted that it is physically possible to remove all debris from a capillary tube with multiple apical foramina. Apply this to the root canal.

The universal choice of the dental profession for a permanent root canal filling is a gutta percha compound rendered sufficiently soluble by a suitable solvent. Dr. Weston A. Price of the National Dental Research Department has conducted a series of experiments along this line and he asserts as a result the following: "That it is physically impossible to completely fill a pulp chamber and root canal permanently with gutta percha rendered plastic by any of its solvents." Price's experiments further proved that after a filling has been in a canal for a time, contraction takes place, due to the disappearance of the solvent, leaving a free space through which bacteria have free access. "Hence," he concludes, "we are using materials which do not possess the properties which our needs require. The contraction may continue slowly for months and possibly for years. This is probably an explanation of why a number of root filled teeth which appear normal shortly after the operation, fail months or years after the root canal operation.

From the foregoing statement of one of the most eminent men of the dental profession, one can see that every dead tooth must repose under very grave suspicion. In other words, it is a potential source of danger and in the presence of a history and symptoms, should be surgically removed. Too much faith cannot be placed in radiography as an unfailing aid in diagnostic value. This is applicable also to the gum tissue. There are numerous cases on record of an existing focus of infection about teeth which was not disclosed by a radiograph or the condition of the gum tissue.

It is an accepted theory that infected root canals constitute perhaps 80 per cent. of oral focal infection. Let us now discuss the method of infection and the systemic disturbances that arise from such. We are taught by pathologists that the most common part of entry of infection is the mouth, and that the streptococcus abounds in the mouth. Under normal conditions they may remain perfectly harmless, but upon the entry of these organisms or their toxins into the circulation of deep tissues, grave systemic disturbances may result. Dr. Machat of Brooklyn has carried out a series of experiments in this respect and has collected his data in the following manner. It might be well to mention here that Dr. Machat is oral surgeon to three outstanding hospitals in New York. He says, "From the study and treatment of many hundreds of patients in the wards of three hospitals, where a properly recorded anamnesis, together with the reports of other specialists is available, where team work between the internist and the oral specialist is at its best, where, regardless of the clinical manifestations of the case, the rehabilitation of the patient is paramount, here has been my opportunity to observe the menace of mouth sepsis. Patients long bed ridden are not infrequently discharged shortly after the removal of pulpless teeth.

There are two conceptions of the origin of dental focal infection—primary and secondary. Primary infections are those which would occur directly through the root canal and affect the apical tissues, first resulting in a granuloma from which secondary infections might easily occur through the circulatory system which it is intimately connected with. This granuloma is Nature's attempt at walling off infection, and, though often successful, yet many times fails, when adverse forces are too strongly arrayed against her. The second conception of dental focal infections is one held by some pathologists, that is, the hemotogonic theory which takes cognizance of ever present germ life in the stream itself. With the apical tissues damaged by over instrumentation, or by over sterilization by strong medicaments, or by the introduction of even slight sepsis through the canal, these tissues may become damaged and lowered in resistance, and incapable of withstanding the infection that is always carried throughout the circulatory system. In this way it is presumed that a dental focus may originate, although the root itself has been properly sterilized and root canal successfully sealed. In short, the granuloma itself may be a secondary infection. The bacteria carried by the blood and lymph finds easy lodgment and little resistance in these apical areas, with the result that we have a focus of infection, usually streptococcus viridous, which is capable of supplying infective material to the joints, to the heart, to the muscles, and to nerve sheaths, for all of which tissues have a peculiar predilection.

Of the two methods, the former, or root canal route, is, undoubtedly the one most often the cause of these conditions. Unfortunate results from treatments of putrescent canals and re-sterilization of root canals, would seem to lend weight to the direct theory of root canal route. Following such manipulations we often have acute apical abscesses, with some very distressing systemic disturbances. No doubt, also, mechanical and chemical irritation of apical tissues, in the process of root canal fillings, lower the resistance of these tissues. Frequent infections or reinfections of these apical areas following exposures to cold and debilitating diseases, would lend weight also to the so-called hematogenous theory.

The difficulty of being moderate, and taking a middle course is well exemplified in the attitude of the medical and dental professions regarding oral focal infections. Both extremes are encountered, some declaring that eighty-five or ninety per cent. of ills are traceable to oral sepsis, while others declare that this is but another fad and fancy and that no evidence is forthcoming to prove that dental infections ever cause systemic disturbances. To be specific, one authority states that eighty-five per cent. of his surgical cases are traceable to oral sepsis; another says that more than ninety-nine per cent. of devitalized teeth are a distinct menace to health. The other extreme can be found in the statement of a prominent research worker and dental educator who states that there is nothing about the dental granuloma that indicates bacterial infection. "It is a walled off circumscribed area," he says, "a thickened sac of fibrous tissue. It may contain a few non-virulent streptococci but so does the healthy mouth. Its histology shows that it undergoes fatty degeneration and it frequently calcifies. It is a minor and harmless thing." Let us have the logic of the dental research worker in his own words. "A focus of infection is a localized pathological area in which bacteria are to be found. Here goes on the conflict between the bacteria, their morbid products and the host. Here the process is centralized, and if the forces of immunity are unimpaired the bacteria, if not actually destroyed, are walled off from the rest of the human system, and more, the individual attains a specific immunity against this specific process. Bacteria are not discharged freely into the circulation to wander around at will and to settle without rhyme or reason at any point they may choose. Once they enter the blood they are shortly disposed of by all the forces of immunity. Should they be introduced into the circulation not in small numbers but in large numbers and in increasing doses, what happens? A high degree of immunity is obtained. This is the very method employed to obtain a new serum." Therefore he would conclude that the granuloma is a minor and a harmless thing. Does not the same reasoning and the same logic apply to any infection from appendicitis or tetanus? He would have us infer that the natural or an acquired immunity would take care of all infections; in other words, any infection is a minor and a harmless thing.

Between those extremes there is surely a middle ground. There is indeed some agreement amongst bacteriologists and internes that focal infections are not minor and harmless things, but very serious and potential menaces to the organism, which at some inopportune moment may lose its resistance and immunity, and may become seriously damaged and crippled if it does not fatally terminate its existence.

Dr. Billings' clinic shows that eighty-nine per cent. of arthritic patients are carrying alveolar abscesses or dental granulomata; also that patients with much dental restorations and root canal treatment have more apical resorptions than those whose teeth have been neglected, all of which can be easily understood. Instrumentation, caustic sterilization and indifferent root canal surgery produce innumerable granulomata which may not all become abscesses.

It is now definitely and positively known that a septic root cannot be completely sterilized throughout its tubuli, and that the best that the most conscientious dentist can do is to hermetically seal in this infection and close the apical foramen, an undertaking most difficult and by no means uniformly successful. Crowning teeth and filling root canals, at best is extremely artificial, and it should not be any great surprise if failure should attend attempts to this end.

The question naturally arises from the above discussion, "What are we going to do with a tooth in which the pulp has been rendered non-vital?" The writer's personal opinion is that a great deal of thought should attend this question. Before a decision is reached in favor of retaining such a tooth in the mouth the following factors should be carefully considered under the close co-operation of dentist and physician. A history chart should be compiled of not only the patient himself, but of his family. This chart should embrace such factors as past diseases, past health in general, present health (arrived at upon the completion of a general examination of heart, lungs, blood, urine, etc.), position of the tooth in the arch. In my own opinion this is of paramount importance. I personally believe that root canal surgery should not be undertaken in the molar teeth. Carrying out the above chart the dental surgeon can decide whether or not his patient is sufficiently strong to withstand any slight infections that might occur.

In conclusion, let me say, the subject is broad. I have only mentioned the term "pulpless teeth," so to speak. However, I hope that the few facts that I have presented for my readers will succeed in impressing upon them the tremendous horizon of this subject, and beg that it receive the consideration which it deserves.

Dental Societies

ADDRESS BY W. H. WARDROPE, K.C., AT LUNCHEON OF ONTARIO DENTAL SOCIETY

''True Citizenship'' was the subject of an address by W. H. Wardrope, K.C., of Hamilton, at the luncheon of the Ontario Dental Association in the Central Y.M.C.A., at which over 300 members were in attendance. ''We find,'' said the speaker, ''in this and other gatherings of a similar nature, that underlying the surface of humor, wit and goodfellowship there is a seriousness that denotes everyone is in earnest, seeking knowledge and obtaining a broader outlook on life by meeting fellow men.

''The great majority of men,'' he continued, ''are serious minded, but at times we are all liable to think more or less of the material rewards, such as wealth, success and the pleasures and comforts of life, and at these times we are not fulfilling our duty as citizens. The soldier's chief reward is knowing that he has done his duty, but nowadays we are sometimes led to believe otherwise owing to the numerous agitations, and, personally, I believe that he should get something tangible. Work is the proper aim of the true citizen and the reward for work is secondary. The first duty of you dentists is to cure your patient and if you think of your fee first you are a Judas Iscariot. We look upon him as one of the worst types of men, yet how many profiteers of to-day would have the grace to go and hang themselves?

''At the present it seems that almost everyone is out for material gain. The striker wants everything he can get, whether he is entitled to it or not, and the capitalist raises his prices whether the action is warranted or not. They are both Judas Iscariots in that they believe that the world is strong enough to save itself without their assistance, and they are out to get what they can while it is possible. You are a select body of men, and you should set an example in your communities that will be followed by others. Place your work first and the reward second, citizenship first and self second. If you do this the world will gradually become a better place in which to live. In closing, I would like to point out that the chief aim of every citizen is to make Canada a place worthy to live in, and to make ourselves worthy to live in Canada.''

ONTARIO DENTAL CONVENTION

The following is the list of registrations at the Toronto Convention, May 3 to 6, 1920.

Dr. N. Abbott, London, Ont.; Dr. J. M. Abbott, Erin, Ont.; Dr. H. R. Abbott, London, Ont.; Dr. Frank Adams, 325 College Street, Toronto; Dr. W. S. Allen, Dr. A. H. Allen, Peterborough, Ont.; Dr. R. H. Aljoe, 144 Gerrard Avenue; Dr. Russell Alkinson, 806 Bathurst St., Toronto; Dr. G. P. Allen, Mt. Forest; Dr. W. B. Amy, 147 Bloor St. W., Toronto; Dr. E. F. Armstrong, Cobalt; Dr. W. J. Armstrong, Iroquois; Dr. J. W. Armstrong, 22 College St., Toronto; Dr. H. W. Anderson, 213 Bloor St. E., Toronto; Dr. L. Ante, 326 Bloor St. W., Toronto; Dr. E. F. Arnold, 2 Bloor St. E., Toronto; Dr. H. C. Arnott, Oshawa; Dr. J. L. Anderson, Oakville, Ont.; Dr. R. H. Atkey, Union Bank Bldg., St. Catharines; Dr. W. A. Ashly, Napanee; Dr. J. H. Atkins, 168 Annette St., Toronto; Dr. J. E. Amos, Brantford; Dr. Bagshaw, 100 Avenue Road, Toronto; Dr. Ball, 22 College St., Toronto; Dr. T. E. Ball, Harriston; Dr. Earl Ball, 2559 Yonge St., Toronto; Dr. L. Ballantyne, 544 Spadina Ave., Toronto; Dr. H. Bannerman, Owen Sound; Dr. J. C. Bannerman, Owen Sound; Dr. J. C. Bansley, 325 Church St., Toronto; Dr. W. F. Baird, Northcliffe Blvd., Toronto; Dr. E. D. Barker, Stouffville; Dr. J. W. Barker, Cannington; Dr. A. E. Barnby, Leamington; Dr. F. Barron, Paris; Dr. J. A. Beaty, Stratford; Dr. D. H. Beaton, 495 Bathurst St., Toronto; Dr. M. C'G. Be, Owen Sound; Dr. E. G. Berry, 161 Saunder Ave., Toronto; Dr. R. N. Berry, Caledonia; Dr. G. W. Bauld, Sault Ste. Marie; Dr. B. B. Beeton, Whitby; Dr. C. E. Biehn, Windsor, Ont.; Dr. M. E. Billings, Cayuga; Dr. Russel Bishop, Toronto; Dr. W. A. Black, 2 Bloor St. E., Toronto; Dr. R. W. Blackwell, Kincardine; Dr. J. Bothwell, Stratford; Dr. J. A. Bothwell, 2 Bloor St. E.; Dr. W. H. Bowles, Orangeville; Dr. L. F. Boyle, 1348 Queen St. W.; Dr. J. A. Brett, 518 Dovercourt Road, Toronto; Dr. F. G. Brethour, Spadina & College, Toronto; Dr. G. P. Britton, Guelph; Dr. J. S. Brooks, 156 Roncesvalles; Dr. C. E. Brooks, 2 Bloor St. E.; Dr. G. C. W. Broom, Kingston, Ont.; Dr. J. J. Brown, Woodstock; Dr. J. W. Brown, Caledonia; Dr. A. J. Broughton, College & Markham; Dr. E. E. Bruce, Kincardine; Dr. A. C. Burnet, King E., Hamilton; Dr. W. Burnet, Galt; Dr. G. S. Caeson, Goderich; Dr. J. M. Cation, 917 Keele St., Toronto; Dr. R. M. Chambers, Leamington; Dr. J. S. Chambers, 186 King W.; Dr. A. G. Campbell, Wallaceburg; Dr. E. H. Campbell, 171 Yonge St.; Dr. G. H. Campbell, Orangeville; Dr. T. D. Campbell, Dutton; Dr. T. F. Campbell, Galt; Dr. O. W. Canning, 685 St. Clair Ave. W., Toronto; Dr. W. L. Chalmers, Charles E., Toronto; Dr. C. G. Chapin, 229 Danforth Ave; Dr. M. J. Clarke, Belleville; Dr. C. H. Clarkson, 797 Bathurst St.; Dr. P. E. Clarkson, 131 Albany Ave., Toronto; Dr. H. Clark, 1104 Temple Bldg.; Dr. O. Clappeson, Hamilton; Dr. A. M. Clark, Woodstock; Dr. G. C. Clemence, Lindsay; Dr. F. J. Conboy, 1043 Bloor St. W.; Dr. W. H. Coon, 25 College St.; Dr. G. Coveyduc, 752 Dovercourt Rd.; Dr. R. H. Cowen, Hamilton; Dr. C. R. Collard, 429 College St.; Dr. T. L. Cole, 432 St. Clarens Ave., Toronto; Dr. H. R. Conway, 69 Carlton St., Toronto; Dr. G. H. Coram, 490 Parliament St.; Dr. M. P. Corrigan, Strathroy; Dr. P. A. Corrigan, 2 College St.; Dr. J. Craig, Peterborough; Dr. J. C. A. Crawford, Haileybury; Dr. E. Cunningham, Parry Sound; Dr. Hugh Cunningham, 2881 Dundas St. W.; Dr. W. A. Dalrymple, 1 Cottingham St.; Dr. D. Davidson, Woodstock; Dr. R. C. Davis, King St., St. Catharines; Dr. C. L. Daly, 2 Bloor St. E.; Dr. W. Davy, Morrisburg; Dr. L. Davidson, St. Thomas; Dr. A. Day, Kent Bldg.; Dr. T. W. Dawson, 2 Bloor St. E.; Dr. J. M. Deans, Galt; Dr. A. C. Demille, Picton; Dr. J. C. Derutt, Bowmanville; Dr. R. Dickson, 1 Carlton St.; Dr. G. Dodge, Chapleau; Dr. W. J. M. L. Dolson, Cobalt; Dr. D. H. Dow, Dutton; Dr. J. H. Duff, 2 Bloor St. E.; Dr. Jas. Duna, Galt; Dr. R. A. Dunlop, 31 Appleton Ave.; Dr. O. Duprau, Belleville; Dr. C. H. Eaton, 278 Roncesvalles Ave.; Dr. H. E. Eaton, 2 Bloor St. E., Toronto; Dr. A. Edwards, 801 Kent Bldg.; Dr. W. S. Elliott, Copper Cliff; Dr. Geo. Everett, Hamilton; Dr. A. Ellis, Bank of Hamilton Bldg., Toronto; Dr. S. Eckel, Waterloo; Dr. C. D. Fallis Osington, 7 College St., Toronto; Dr. R. M. Fisher, Wiarton; Dr. Stanley T. Floyd, 1401 C. P. R. Bldg., Toronto; Dr. S. Frawley, 2 Bloor St. E.; Dr. J. A. Fleming, Prescott; Dr. Grant Fraser, Madoc; Dr. C. J. Freeman, Beamsville; Dr. H. G. French, Dresden, Ont.; Dr. W. Fear, Aylmer; Dr. L. Fralick, St. Marys; Dr. F. J. Furlong, 39 James St., Hamilton; Dr. E. W. Fuller, 214 Dundas St., London; Dr. W. F. Ganton, Uxbridge; Dr. B. R. Gardiner, 2 College St.; Dr. E. S. Gausby, 114 Carlton St.; Dr. G. F. Gibson, Picton, Ont.; Dr. Ray Gilbert, St. Thomas; Dr. G. F. Gilroy, 490 Spadina Ave.; Dr. L. S. Goodman, Welland; Dr. B. Gollop, Georgetown; Dr. J.

Grassie, Welland; Dr. W. R. Glover, Kingston; Dr. George Gow, 48 Bloor St. E., Toronto; Dr. H. F. Goodman, Saulte Ste. Marie; Dr. C. R. Grant, Walkerton; Dr. Edmund A. Grant, 229 College St., Toronto; Dr. W. H. Graham, 206 Laurier Ave., Ottawa; Dr. R. Graham, Ottawa; Dr. W. R. Grieve, Ottawa; Dr. M. H. Hagey, Preston; Dr. H. H. Halloran, 22 College St., Toronto; Dr. F. Hansel, Hamilton, Ont.; Dr. J. R. Hand, 179 2nd Ave., Ottawa; Dr. M. S. Hawkins, Port Hope; Dr. L. E. Harriman, Gravenhurst; Dr. H. N. Hartman, Meaford; Dr. R. R. Harvey, Midland; Dr. E. Hand, Brantford; Dr. W. Y. Hayden, 614 Wellington St., London, Ont.; Dr. Roy Heath, Woodstock; Dr. C. K. Henderson, Hespeler, Ont.; Dr. A. H. Hertell, 1291 Bloor St. W.; Dr. H. A. Hoskin, Dominion Hospital; Dr. A. A. Hicks, Chatham, Ont.; Dr. Frank Hinds, Orillia, Ont.; Dr. Arthur N. Hill, Dundas; Dr. E. A. Hill, Sudbury; Dr. J. A. Hilliard, Kitchener; Dr. H. H. A. Hill, Cobalt, Ont.; Dr. W. J. Hill, Alliston; Dr. H. W. Hoag, 21 Danforth Ave.; Dr. R. W. Hoffman, 2046 Queen St. E., Toronto; Dr. E. W. Hohner, 68 Summerhill Ave., Toronto; Dr. G. H. Holmes, Owen Sound; Dr. A. M. Hord, 167 Avenue Road, Toronto; Dr. F. W. Howe, 2 Bloor St. E., Toronto; Dr. H. A. Holmes, 72 Harbord St.; Dr. G. N. Howden, Walford; Dr. F. C. Husband, 2 Bloor St. E.; Dr. J. Hutchinson, London, Ont.; Dr. Guy G. Hume, 48 Bloor St. E., Toronto; Dr. Henry Hudson, Whitby; Dr. O. G. Hassard, Windsor; Dr. J. H. Irvine, Collingwood; Dr. H. Irvine, Lindsay; Dr. A. J. Irvine, Wingham; Dr. S. S. Ionson, Port Rowan; Dr. W. F. Jeff, Dresden; Dr. E. F. Jamieson, 2283 Wyandotte St., Windsor; Dr. F. Jarman, 50 Manor Road; Dr. A. Jamieson, Millbrook, Ont.; Dr. Geo. Jordan, 35 Queen St., Toronto; Dr. G. H. Jones, 2074 Queen St. E.; Dr. J. E. Johnson, Hamilton, Dr. A. Johnson, Petrolia; Dr. S. M. James, Penetanguishene; Dr. H. M. Kalbfleisch, 454 Clendennan Ave., Toronto; Dr. H. M. Katzenmeire, 93 King St. W., Kitchener; Dr. Kruges, 2234 Queen St., Toronto; Dr. E. Kelly, room 25, Sun Life Bldg., Hamilton; Dr. F. Killmer, 22 Welland Ave., St. Catharines; Dr. A. Kinsman, Exeter; Dr. J. W. Kennedy, St. Thomas; Dr. H. F. Klopp, Mattawa; Dr. H. G. Kinsman, 130 Christina St., Sarnia; Dr. F. T. Knight, Picton, Ont.; Dr. J. Kinnear, Belleville; Dr. Kennedy, London; Dr. W. Laidlaw, 394 Euclid Ave.; Dr. F. W. Landymore, Brantford; Dr. F. Leath, St. Thomas, Ont.; Dr. G. A. Lee, 190 Avenue Road, Toronto; Dr. S. Lederman, Kitchener, Ont.; Dr. E. J. Lederman, 1 Albany Ave.; Dr. A. H. Lesker, 512 King St., Hamilton; Dr. H. D. Leuty, 337 Danforth Ave., Toronto; Dr. G. A. Liscomb, Drayton, Ont.; Dr. J. A. Locheed, Hamilton; Dr. W. B. Linscott, Brantford; Dr. W. E. Lundy, Toronto; Dr. W. J. Loftus, St. Catharines; Dr. F. S. Loucks, Clarksbury; Dr. L. M. Mabee, Goderich; Dr. A. H. Mabee, Gananoque; Dr. M. M. Mackay, Mimico Beach; Dr. H. G. Macdonald, Goderich; Dr. W. Macdonald, 1083 Bloor St. W.; Dr. J. P. MacLachlan, 26 College St.; Dr. W. S. Madill, 2 College St.; Dr. E. D. Madden, Smiths Falls; Dr. W. A. Mathieson, 341 Danforth Ave.; Dr. W. E. Moyan, North Bay; Dr. W. G. Manning, Hamilton; Dr. O. Marker, Ottawa; Dr. O. Marshall, Belleville; Dr. H. H. Maranda, Plantager; Dr. J. M. Mitchell, Collingwood; Dr. J. E. Middleton, 404 Water St., Peterborough; Dr. G. K. Mills, Tilbury; Dr. Margorie E. Milne, 2 Bloor St. E.; Dr. R. J. Montgomery, 533 St. Clair Ave. E.; Dr. J. C. Moore, Orillia; Dr. F. P. Moore, Hamilton; Dr. Chas. E. Moyer, 205 Yonge St., Toronto; Dr. L. E. McLachlan, 505 Lisgar St., Ottawa; Dr. R. G. MacDonald, Hamilton; Dr. W. A. Maclean, St. Catharines; Dr. W. J. MacMurray, 179 Yonge St.; Dr. C. W. McBride, Smiths Falls; Dr. H. A. McClean, Milton; Dr. A. McCaig, Barrie; Dr. A. J. McDonagh, 94 James St., Hamilton; Dr. W. J. McEwen, Hamilton; Dr. J. McCullough, Perth; Dr. Kenneth McDowell, Renfrew, Ont.; Dr. E. J. McCahy, Toronto; Dr. G. V. Morton, Toronto; Dr. Robert McGill, Mitchell; Dr. George MeGuire, Dunnville; Dr. G. C. McKuiley, 950 St. Clair Ave.; Dr. W. S. McKay, Galt; Dr. H. A. McKim, 420 Roncesvalles Ave.; Dr. H. O. McLaughlan, Toronto; Dr. C. McLean, Havelock; Dr. E. McNeil, 52 Concord Ave., Toronto; Dr. Gordon McLean, 40 Bloor St., Toronto; Dr. W. J. Harris, Brantford, Ont.; Dr. D. H. Nethercott, Stratford; Dr. B. F. Nishall, 2 Bloor St. E.; Dr. J. O'Brien, Bancroft; Dr. H. V. McGee, 84 Queen St. E.; Dr. M. J. O'Callaghan, Belleville; Dr. J. H. Palmer, Queen & Lansdowne; Dr. L. R. Parr, 34 Lockwood Road; Dr. C. S. Pattison, 2 Trinity Sq.; Dr. J. F. O'Flynn; Dr. Fred Ross, 202 James St., Hamilton; Dr. A. E. Ruddell, 17 King St., Kitchener; Dr. A. W. Rutherford, 700 Bathurst St., Toronto; Dr. D. E. Russell, Brantford; Dr. C. Russell, 214 Greenwood Ave., Toronto; Dr. J. Ryan, 539 Bloor St. W.; Dr. J. Sudworth, Ingersoll; Dr. Fred Saw, 218 Close Ave., Toronto; Dr. P. F. Sawdon, 227 Leslie St., Toronto; Dr. H. W. Sanderson, Toronto; Dr. G. D. Scott, Hamilton, Ont.; Dr. J. H. Scott, 160 Sherman Ave., Hamilton; Dr. Seccombe, 240 College St., Toronto; Dr. Shantz, Kitchener, Ont.; Dr. J. M. Sheldon, 2 Bloor St. E.; Dr. R. A. Sheehy, 751 George St., Peterborough; Dr. Slade, 179 Bathurst St., Toronto; Dr. W. Slater, Galt; Dr. W. B. Smith, 2 St. Clair W.; Dr. D. C. Smith, Stouffville; Dr. Neil Smith, Chatham; Dr. T. L. Smith, 270 Roncesvalles Ave., Toronto; Dr. Lyle Smith, 48 Bloor St. E., Toronto; Dr. Percy Smith, 88 Balsam Ave., Toronto; Dr. Earl Smith, 39 Port St., Brantford; Dr. Arthur Smith, 593 Dovercourt Road, Toronto; Dr. Sellery, 530 Bloor St. W., Toronto; Dr. Semple, 905 College St., Toronto; Dr. Gerald Smith, 137 Annette St., Toronto; Dr. R. J. Smith, Barrie; Dr. C. A. Snell, 2 Bloor Street, Toronto; Dr. Chas. Snelgrove, 105 Carlton St., Toronto; Dr. W. R. Somerville, Haileybury, Ont.; Dr. J. S. Somers, Toronto; Dr. W. G. Spence, Listowel; Dr. L. W. Staples, Ingersoll; Dr. W. D. Staples, Hanover; Dr. R. M. Stewart, Markham; Dr. W. D. Stephens, Westport; Dr. Ray Stone, 1283 Danforth Ave., Toronto; Dr. J. L. Stewart, Kingston, Ont.; Dr. J. N. Stewart, Hamilton; Dr. A. A. Stewart, 2 Bloor St. E.; Dr. J. F. Simpson, Trenton; Dr. G. L. Sparrow, Sault Ste. Marie, Ont.; Dr. W. G. Spaulding, 701 Lumsden Bldg., Toronto; Dr. A. V. Summers, Ottawa; Dr. Chas. E. Sutton, 449 Spadina Ave.; Dr. J. A. Taggart, 752 Dovercourt Road, Toronto; Dr. L. E. Tanner, 152 B Main St., Hamilton; Dr. C. B. Taylor, St. Thomas, Ont.; Dr. Lawrence Thompson, Perth; Dr. A. S. Thompson, 1 O'Hara Ave., Toronto; Dr. J. E. Thompson, Schreiber, Ont.; Dr. T. M. Pattison, Welland, Ont.; Dr. Edgar Paul, 205 Yonge St., Toronto; Dr. Chas. E. Pearson, 2 Bloor St. E.; Dr. T. F. Perkin, 43 Lauder Ave., Toronto; Dr. J. S. Phillips, Oshawa, Ont.; Dr. J. F. Pilkey, 462 Gladstone Ave., Toronto; Dr. W. J. Pierce, Orangeville; Dr. Porter, Toronto; Dr. Frank Price, 351 Sherbourne St., Toronto; Dr. O. G. Plaxton, 326 Bloor St. W., Toronto; Dr. J. F. Ralbit, Barrie, Ont.; Dr. E. A. Reid, 36 Wilcox St., Toronto; Dr. H. W. Reid, Toronto; Dr. James Reid, 75 Bloor St. E., Toronto; Dr. R. L. Revell, Woodstock; Dr. S. P. Reynolds, London, Ont.; Dr. H. K. Richardson, 1200 St. Clair; Dr. G. S. Richardson, Ottawa; Dr. H. A. Robertson, Hamilton; Dr. R. E. Robertson, Collingwood; Dr. E. J. Robinson; Dr. W. E. Roper, 941 College St.; Dr. John F. Ross, 2 College St.; Dr. H. C. Ross, Weston; Dr. W. H. Ross, Wingham; Dr. G. F. Roulston, Exeter; Dr. T. A. Routledge, Ridgetown, Ont.; Dr. M. A. Ross Thomas, London; Dr. R. D. Thornton, 96 College St., Toronto; Dr. M. C. Tindalle, Hamilton; Dr. J. W. B. Topp, Bracebridge, Ont.; Dr. W. Cecil Trotter, Toronto; Dr. W. G. Treeford, 14 Humewood Drive, Toronto; Dr. N. P. Truemer, Arthur; Dr. R. J. Vance, Waterdown, Ont.; Dr.

C. E. Vandervoort, Toronto; Dr. F. E. VanDuzer, Toronto; Dr. L. T. Veitch, Toronto; Dr. A. B. Wagg, Toronto; Dr. D. J. Weadick, Hamilton; Dr. C. V. Wallace, Toronto, Dr. C. F. Walt, Stirling, Ont.; Dr. H. B. Walker, Toronto; Dr. F. A. Walters, Mount Forest; Dr. O. C. Watson, Campbellford, Ont.; Dr. F. R. Watson, Georgetown; Dr. D. Watson, Brantford; Dr. H. Worters, Ottawa; Dr. F. Waugh, Kingston; Dr. R. G. Ward, Toronto; Dr. W .W. Weir, Toronto; Dr. A. M. Weldon, Peterborough; Dr. W. S. Westland, London; Dr. H. W. Wilkinson, Newmarket; Dr. E. H. Wilson, Perth; Dr. W. Willmott, Toronto; Dr. F. L. Williamson, 1 Sun Life Bldg., Hamilton; Dr. C. Windsor, London; Dr. J. R. Will, Brantford; Dr. G. A. Wilcox, Brantford; Dr. A. W. Winney, Kingston; Dr. S. C. Wilson, Perth; Dr. W. T. Willard, Toronto; Dr. Ghent Wilson, Toronto; Dr. R. A. Willmott, Strathroy, Ont.; Dr. J. O. Wilson, Toronto; Dr. P. P. Winn, Alliston; Dr. R. O. Winn, Kitchener; Dr. A. D. Wood, Coldwater; Dr. W. J. Woods, Toronto; Dr. F. J. Wright, Toronto; Dr. W. Wunder, Toronto; Dr. W. Young, Elmira; Dr. O. Ziegler, Toronto; Dr. F. Zinkan, Toronto.

A SPECIAL BULLETIN TO THE DENTISTS OF ONTARIO

Issued with the authority of the Royal College of Dental Surgeons.

Syphilis and gonorrhoea are known to be a serious menace to the welfare of the province. Recognizing this fact, the Provincial Board of Health is beginning a campaign against them. This campaign must have the support of professional men and laymen to be a success. For this reason, appeals are being made to doctors, dentists, clergymen, journalists and druggists for their support.

This appeal is sent to dentists to point out their responsibility in preventing the spread of these diseases. The board recognizes the especial importance of interesting the dental profession because of the danger of transferring syphilis from one patient to another by means of dental operations.

Syphilis, as all dentists know, is no respecter of persons and is found in all walks of life. It is too often not recognized when examinations of the mouth are made for dental treatment.

Those who have lesions in their mouths which they know to be syphilitic do not as a rule seek dental treatment unless compelled to do so. Those who have lesions and do not know it do go to a dentist, and for that reason are a serious menace to the health of both the dentist himself and his other patients.

The ease of transmission in the case of syphilis is well known to all members of the profession—a break in the skin or mucous membrane, a spirochaeta gaining entrance and passing into the circulation—and infection occurs. The simple scaling of a tooth usually involves the breaking of continuity of the gum tissue and exposes the patient to infection from an infected instrument. On this account it is extremely important that dentists should carry out as far as possible the principles of asepsis in their offices. It should be remembered that the saliva of syphilitic patients often contains spirochaetæ and it is not necessary for blood to be drawn from one patient to infect another through instruments.

Of course, many communicable diseases produce lesions in the mouth and clinical study is necessary to be able to differentiate these (for instance, gonorrhoeal gingivitus and trench mouth often produce very similar lesions). The knowledge thus obtained will often be found to be of great value to the dentist in his daily practice.

A more frequent discussion of syphilis and gonorrhoea in dental societies would be of great benefit to the general public as well as to the dental profession itself.

GUESTS AT ONTARIO DENTAL ASSOCIATION MAY, 1920

Dr. James C. Allen, New York city; Major Lewis Campbell, Dom. 6-M. Hospital; Dr. W. Glasgow, Winnipeg, Man.; Dr. Frank Knight; Dr. H. E. Klinger, Sydney, N. S. W.; C. L. Lewis, Toronto; Dr. John O. McCall, Buffalo, N. Y.; W. H. McLangklin, Hamilton; E. F. Risdon, Toronto; H. Ross, Tisdale; Dr. Roe, Dublin, Ireland; Dr. P. Stillman, New York city; W. G. Switzer, Toronto; A. H. Smith, Rochester, N. Y.; W. G. Thompson, Hamilton; Capt. R. S. Woollatt, Toronto; E. R. Zimmerman, Toronto; H. Kawaniura, Chicago, Ill.; W. W. Irwin, Moose Jaw, Sask.; W. W. Thornton, D.O.H., C.A.D.C.; W. E. Cummer, Toronto.

Editorial

EDITOR:
A. E. Webster, M.D., D.D.S., L.D.S., Toronto, Canada.
ASSOCIATE EDITORS:
ONTARIO—M. F. Cross, L.D.S., D.D.S., Ottawa. Carl E. Klotz, L.D.S., St. Catharines.
QUEBEC—Eudore Debeau, L.D.S., D.D.S., 396 St. Denis Street, Montreal; Stanley Burns, D.D.S., L.D.S., 750 St. Catherine Street, Montreal; A. W. Thornton, D.D.S., L.D.S., McGill University, Montreal.
ALBERTA—H. F. Whitaker, D.D.S., L.D.S., Edmonton.
NEW BRUNSWICK—Jas. M. Magee, L.D.S., D.D.S., St. John.
NOVA SCOTIA—Frank Woodbury, L.D.S., D.D.S., Halifax.
SASKATCHEWAN—W. D. Cowan, L.D.S., Regina.
PRINCE EDWARD ISLAND—J. S. Bagnall, D.D.S., L.D.S., Charlottetown.
MANITOBA—M. H. Garvin, D.D.S., L.D.S., Winnipeg.
BRITISH COLUMBIA—H. T. Minogue, D.D.S., L.D.S., Vancouver..

VOL. XXXII. TORONTO, JUNE 15, 1920. No. 6.

"BY THEIR FRUITS YE SHALL KNOW THEM"

The Legislature of Nova Scotia has under discussion a modification of the Dental Act providing that no one except those holding licenses from the Board or Council may practice dentistry in the province. In the past a holder of a license could employ persons who had no license to practice under their guidance. While this matter was under discussion the Halifax newspapers published in double columns and large type a letter signed by O.B.U. Molar. There can be little doubt but some dentist who was employing unqualified persons to practice on the public was the author of the letter.

If the supposed information set forth for the public to read in these letters is an indication of the knowledge of the dentist who has been employing unqualified persons to practice on the public he should have his license cancelled at once. He says that the dentist's business is to remove, patch or mend teeth, and that no teeth pain until decay sets in, and that only a doctor (he doesn't say whether it is of laws, divinity, philosophy, agriculture, science, dentistry or pedagogy he means, but we presume it is of medicine) knows whether teeth cause disease or not. He also says "the dentist employed, whoever he may be, is not consulted as to whether the offending teeth can be saved or not, he is primarily ordered to remove them." Some Canadian dentists know to their sorrow that they cannot shirk their responsibilities to the patient in this simple manner; they have had to pay for their actions in mal-practice suits. The dentist who extracts the teeth takes the responsibility.

"Dentistry is not a profession but a mechanical occupation. It requires a very limited amount of scientific information, merely the anatomy of the mouth, good instruments, some strength and a minimum of skill."

No person with only the above equipment should be allowed to practice dentistry for any one. He is a menace to the public, a breeder of disease and a disgrace to his calling.

IDEAS RULE THE WORLD

The Puritans had an idea of freedom in England three hundred years ago, and that idea is affecting China to-day.

Your idea may be the brightest in the world, but it will never affect the world of dentistry if you keep it to yourself. Come to the Canadian Dental Association Convention in Ottawa, August 17, 18, 19, 20th, and give it to the rest of us. It may revolutionize dentistry.

Then, again, your idea may be wrong in itself, but it may initiate a new idea in someone else's thought which will be right, then you'll both have benefited. Two poor ideas combined will sometimes make one good one.

Conscientious and intelligent dentistry is itself an Utopian idea; the practitioner goes on from day to day clearing up, eradicating and teaching his clientele how to avoid the very conditions by which he himself makes his living. His contribution to the health and comfort of the nation is great.

Come to the convention and become still better fitted to carry on the ideal practice of dentistry.

Ever feel a lot better when you told a friend your trouble? Remember how relieved you felt in your boyhood days when you got it off your chest to "someone who understood"? You'll do just that at the C.D.A., perhaps unconsciously, but you'll acquire that feeling you used to have after four o'clock on the last day of school in June.

It's worth coming for.

Is the physician in your town a "wholesale extractionist"? If so, has he any more right to dogmatically diagnose dental conditions than you have to order the removal of an appendix?

How can you obtain his co-operation, and more intelligently collaborate with him?

Come to the convention and *find out.* It will be discussed.

The constitution and by-laws of the Canadian Dental Association will be brought up for discussion and ratification at this meeting. They make the C.D.A. the "Federal House" or "Supreme Court" of dental society organization in Canada. In the light of present-day conditions, it is essential that dentistry as a profession be able to present a solid front, properly organized and not be in the position professionally that we are as individuals, in the class who pay the price whether the victory be with capital or labor.

Editorial Notes

Dr. Harry Jackson has begun practice in Ottawa.

❧

Dr. Hillis has begun practice in Guelph, Ontario.

❧

Dr. J. T. Irwin has been appointed to the dental staff of the Board of Health, Toronto.

❧

There is a school nurse engaged in Belleville, Ont., who is assisting in the dental survey.

❧

Major Cameron, M.D., '12, visited Calgary recently to close out the military dental stores at that point.

❧

The annual commencement of the Faculty of Dentistry, Dalhousie University, was held May 27th, 1920.

❧

Dr. French, Edmonton, recently presented a paper on Prosthetic Dentistry to the Edmonton Dental Society.

❧

The Royal College of Dental Surgeons intends to limit its first year class for the session of 1920-1 to one hundred and fifty students.

❧

Dr. Rose of the C.A.D.C. has purchased the practice of Dr. Fitzpatrick, Brandon, who intends to form a partnership with his brother in Winnipeg.

The bill which was before the Legislature of New Brunswick to give a William Gerrard a license, did not come up for its third reading and thus failed to pass.

⁂

Dr. Armand Ladouceur, eldest son of E. A. B. Ladouceur, K.C., Clerk of the Crown and Recorder of Pointe aux Trembles, has been admitted to the practice of dentistry with great distinction. Dr. Ladouceur will practice his profession at Montreal and Pointe aux Trembles.

⁂

The Moncton Dental Society made a presentation to the Hon. Mr. Sweeney for his stand taken against amending the New Brunswick Dental Act so as to allow licentiates of England before 1890 to practice in the province. It was through his influence that the bill was withdrawn.

⁂

Major H. E. Thompson, who was for almost four years in one or other of the hospitals in M.D. 2, has returned to Toronto from Moncton, N.B., where he was recently in practice, to direct the affairs of the Canadian Oral Prophylactic Association. Dr. Thompson has very special qualifications for such important work. Besides being a well-trained dentist, a good public speaker and a good executive officer, he is a keen observer, and will spend his chief energy in the dental research department of the University of Toronto, where he will be pleased to meet any person who is interested in dental problems.

⁂

The Victoria, B.C., Dental Society have re-organized with the following officers: President, Dr. H. Le Roy Burgess; Vice-President, Dr. R. E. McKeon; Secretary, Dr. William Russell; Treasurer, Dr. B. Cummings Richards; Executive Committee, Drs. Richard Nash, C. N. Westwood and Alf. J. Thomas. Meetings are held on the third Tuesday of each month at 6.30 p.m., when the members partake of dinner, after which the business session is held. At the last meeting a splendid paper on "Block Anaesthesia" was presented by Dr. R. E. McKeon. At the June meeting a paper will be given by Dr. H. Le Roy Burgess.

FOR SALE—Good dental practice in live city in Manitoba. Large rooms, good light, cheap rent. In best location in the city. Reason for selling enquire of the Temple-Pattison Co., Toronto or Winnipeg.

Dominion Dental Journal

Vol. XXXII. TORONTO, JULY 15, 1920. No. 7.

Original Communications

NOTES ON MAKING METAL INLAYS

A. E. Webster, D.D.S., M.D., Toronto.

The method of making an inlay must be chosen as soon as the cavity is prepared, even to the choice of the impression materials, trays, metals, investments and machines.

Methods—Process patented by Land of Detroit, and later by Taggart.

1. Matrix and solder.
2. Andrews crystal gold flowed full of solder.
3. Matrix and covering—hollow or box inlay.
4. Hooks soldered to gold plate (onlay).
5. Casting process.

TECHNIQUE OF MATRIX AND SOLDER DIRECT METHOD.

Oldest Method—

Matrix of pure gold 34 to 38 gauge.—Platinum foil 1/1000 to 3/1000 of an inch.—Demonstrate method using large plaster teeth with sheet lead, damp brown paper, large wooden instruments.—Remove matrix from cavity, invest in Price's stone or paint cavity side with whiting or yellow ochre.—Flow matrix full of solder up to required height.—Replace in cavity and finish.—Indicated in four-walled cavities easy of access.

MATRIX AND CRYSTAL GOLD OR CRYSTAL PLATINUM AND GOLD.

Direct Method—

Make the matrix as before described.—Loosely pack it full of the crystal material incorporating some borax with it or use Andrews gold and wax compound.—Take occlusion as in wax model.—Remove, invest, solder, replace, finish.—

Demonstrate by using clay in matrix.—Indicated in four-walled cavities and when contours are required.

Hollow or Box Inlay—

Make matrix as before.—Burnish and trim edges well.—Fill the matrix with compound.—Trim to form of occlusion and contour.—Over this burnish pure gold plate.—Remove compound.—Attach edge with solder.—Punch a hole in the matrix.—Through this place solder, sufficient to stiffen the occlusal for mastication.—Demonstrate with lead plate and clay.—Indicated in large cavities only.

Hooks Soldered to Plate as Gold Onlay—

Fill cavity with compound.—Trim contour and occlusion, making provision for the thickness of the gold plate.—Burnish plate to place, having care to the margins.—Solder pins or hooks to cavity side of plate.—Stiffen with solder, avoid solder on edges.—Demonstrate—use one large tooth, using G.S. or copper.

INDIRECT AND SEMI-INDIRECT METHODS OF MAKING INLAYS.

Impressions—

Materials and methods used for taking impressions.—Material for impression.—Material for model.—Plaster—sulphur, investment materials, amalgam, low fusing metals.—Compound—amalgam, cement, investment materials.—Hard wax—Price's stone, amalgam, cement, investment materials.—Sealing wax—sulphur, amalgam, cement.—Impression material best adapted for getting an imprint of a hard surface must be short in the grain, plastic, tough and strong enough to be withdrawn without distortion or granular fracture. Plaster of paris is not a suitable material for taking impressions of cavities in teeth, because it is so liable to granular disintegration and fracture, especially when in thin layers. The plastic impression materials must be brought in contact with the cavity surface under pressure and in such a way that the material is so held that it cannot flow or bend until it is hard. Trays or cups must confine the material and hold it rigid until hard. It is essential that every surface of the material shall get equal and direct pressure, so as to avoid flow and warpage. The thinner the layer of material between the tray and the surface imprinted the better. Trays should be light, thin, rigid. They are made from sheet brass or German silver. Many operators prefer to make a tray for each case. Price's trays.—Blue Island aluminum rings.—Brass rings.—Brass shells.—

Crown and bridge trays.—Demonstrate the purpose of each.

Taking Impressions—

Compound and waxes should be made plastic by water bath. Use smallest possible amount of material. Keep in mind that it is an impression of the cavity walls that is wanted, not one of the tooth. Adjust and adapt the tray while the material is heating. Place material in tray with pressure.—Heat surface in flame.—Press firmly to place.—Apply cold air or cotton rolls wet with cold water. If saliva ejector is in mouth and there are no teeth hyper-sensitive to cold, then use streams of cold water to chill the impression material. When the exposed edges will chip and break freely it is ready to remove. Material may sometimes be removed from undercuts between the teeth before an attempt is made to remove the tray. Remove impression by carefully loosening it and slowly withdrawing in the direction it comes easiest, having in mind the direction of the cavity walls. Remove the mucous and moisture from the impression by blasts of air. Examine the margins of the impression in the presence of the cavity. Look carefully for possible undercuts or spots where material may be drawn. Demonstrate the method of getting an impression of the adjoining teeth. The most common material used for filling impressions is amalgam. Silver amalgam.—Technique amalgam.—Copper amalgam.—Oxyphosphate of zinc.—Silicate cements.—Demonstrate the technique of preparing materials for filling impressions as well as the process of filling. Taking of bite for carving of occlusion of wax model.

Price's Artificial Stone—

Liquid phosphoric acid.—Powder silicon and oxide of zinc, mixed like ordinary cements.—Technique of filling impression. Stone does not set without heat.—Allow to stand for a few hours after filling if possible.—Burn wax out.—Asbestos mat one-half inch thick over Bunsen.—Place stone side down.—Melt wax gradually, one-half hour.—Finally raise to red heat in direct flame.—Don't place any of the stone tooth materials in boiling water to heat for separating. —Dry heat is better.—Build wax model in the cavity in the tooth model the size contour and occlusion required.—Remove wax model of filling from the tooth model and invest as in the direct method. If Price's stone is used, invest wax and stone model as one piece, because the metal is cast against the stone which has become very hard, and will bear a heat far above that of molten gold.

DIRECT METHOD OF MAKING CAST INLAYS—INTRODUCTION.

Taggart, 1907, New York Dental Society.—Exacting details. —Only approximately accurate.

Method—

Prepare the cavity so that a wax model of the filling can be carved in the tooth and withdrawn and reproduced in metal.

Waxes—

Properties desired.—Rigid at body temperature.—Short range of temperature between plastic and solid state.—Color contrast with tooth color, black, blue, green and brown.—Burn away, leaving no residue; carve, leaving smooth surface short in the grain.—Can be built without melting.—Does not contract or expand.—Thin edges not friable.—Will not warp in changes of temperature.—Cones: three sizes, each sufficient for a filling.—Sticks: about one-quarter inch in diameter, three to four inches long.—Demonstrate the warpage of wax on second warming; complete fusion prevents warpage.

Methods of Heating to Plasticity—

Taggart's.—Water bath 136 degrees.—Should not be melted in water.—Water heat gives most uniform plasticity.—Small cones may be heated by warming a heavy root canal plugger with thick shank sufficiently to pass up the centre of the cone beginning at the base. As the cone is held on the plugger, it may be heated over the open flame, and as soon as ready withdrawn between the thumb and finger and forced into the cavity. Wax made plastic in water should be almost fused on the surface by the open flame just before it is taken to the cavity.

Making the Wax Model—

Clear the cavity of debris and mucous with tepid water.—Make wax of such a form and size that it will go as nearly to place as possible without pressure.—Exert uniform pressure upon as large an area of the wax surface as possible. The finger, the thumb, a large instrument, or all combined.—With a warm instrument quickly trim away excess, cutting towards the margins and especially crevices and undercuts in proximal cavities.—Before the wax is hard enough to break, sink a small right angle explorer into the wax at its greatest bulk and loosen the model slightly, and if there is any danger of dragging or fracture, withdraw it, making whatever trimming out of the mouth seems desirable.—Replace the wax.—Carve and trim all round the margin and on the proximal, locating the contact, even sometimes heating wax on the margin and pressing to place.—If a proximal cavity reaching the occlusal and a bite is required, trim away the wax as far as thought necessary to accommodate the bite.—Have jaws closed gently. If this is impossible or uncertain, heat the surface of the wax with a Willmott spoon so that it will take an imprint without forcing on the base of the wax. A broad instrument may be held against the proximal to support it during the closure.—Complete the carving, being sure that there is enough wax left on the margins to provide enough gold for finishing.—Chill the wax by air, water applied on cotton, or a stream.—The surface may be mopped with oil of eucalyptus to insure a smoother surface.—Remove wax model, using the same explorer and in the same hole in the wax as before.—Remove any debris from surface of model by tepid water and air.—Examine the model all round the margins for fracture or warpage.—Examine for effects of possible undercuts.—Compare the model with the cavity in minute detail. If any doubt, replace the model in the cavity and correct up defects.—If possible the wax model should be kept at the temperature at which it came from the cavity until the investment has hardened about it.—Many operators keep wax models in a small glass jar of water at room temperature, not tap temperature.—A few operators attach the sprue wire to the inlay in the mouth and use this to withdraw the model. It is usually desirable to put the sprue wire at the point of contact which cannot be done with this method. A fine wire with a hook is sometimes attached and used for withdrawing the model. The accurate withdrawal of the model in the line of the known direction of the cavity walls is not possible with such short fine limber attachments as these.

Investments—

Requirements—Fine, by adding silex.—Smooth, by adding graphite.—Porous, by adding pumice or fireclay.—Strong, by adding plaster.—Bear a high temperature, by adding silex, pumice, fireclay and graphite.—Conductor—Non-contracting or expanding during setting or healing.—Many of the investments used for soldering have been found lacking for casting inlays.—Plaster of paris is the binder in all investments, but unfortunately it does not bear a high heat without deterioration.

Formulae—

Plaster, 12; silex, 16; graphite, 4; fireclay, 1. (Suitable for pressure or centrifugal.) Plaster, 2; silex, 3; pumice or fireclay, 1. (Suitable for suction or large castings.)

All investments do not work equally well for all methods of casting. The suction machine must have a porous investment.—Investments high in plaster should not be used as a crucible.—More failures occur from improper choice and handling of investments than from all other causes.—The direct or indirect method or semi-direct as well as the investment and machine must be chosen as soon as the cavity preparation has been completed.

Investment Rings, Buckets or Flasks—

The ring should be large enough to have the full thickness of the wax model of investment surrounding it.—Bicycle tubing cut from 1¼ inches to 1¾ inches long and 1 inch in diameter is sufficient.—Heavier rings are used for machines where contact is essential to prevent the air gas or steam from escaping.

Sprue Formers and Sprues—

The choice of sprue former and sprue wire are important.—If the metal for the casting is to be fused in the end of the ring as a crucible, then the sprue former should be the arc of a circle with a hole for the sprue wire in the centre.—If the metal for the casting is to be fused in a separate crucible, the sprue former should be a cone curving slowly at first then tapering rapidly and finally coming to a long point in the centre of which is a fine hole for the sprue wire.—Explain the reason for the different forms.—The sprue wire should be so fine that it will not carry enough heat to the wax model to cause it to warp when being attached.—The size of the sprue wire is governed by the size of the casting to be made, but never over 14 gauge for gold.—Brass wire gauge 22 is suitable in size for the cone-shaped sprue former. The heaviest orthodontia ligature wire does very well. —It is not necessary that the wire shall be the full size required for the sprue, because when the wire has been withdrawn from the investment it is always wise to force a cone-shaped instrument down to the wax model, thus packing the walls of the sprue and making it whatever size necessary and making sure that the wax model has not been detached from the sprue wire during investment. If any particles of investment have been detached, they will be carried out of the cavity if the wax melts and flows out.—Gramophone needles are commonly used as a sprue wire in crucible form of investment, but brass wire is better.

Placing Wax Model on Sprue Wire—

Handle the wax model with the fingers, or hold loosely in palm of hand.—Attach the sprue wire opposite the greatest bulk of wax. Usually at the contact point is best.—Double sprues for large M.O.D. cases. More than one inlay may be invested in the same ring by using extra sprues.—Only the very tip of the wire should be healed and should be cooled once attached.—Fine wire should have little hook at the end. —For cone-shaped sprue former, the wax model should be drawn down to the point of the former.—In either case the wax model is kept at least one-quarter inch from the crucible former.

Investing—

It is essential that the wax model has been kept at a uniform temperature since taken from the tooth.—Investment should be made as soon as possible after the model is made.—The water and powder should be the same temperature as the wax model.—Poor mixing accounts for many failures.—Avoid air bubbles by sifting investment into water slowly.—Stir, don't lop the investment in mixing.—Roll the bowl round on its side so as to spread the investment out in thin layers and jar the sides so as to free the air bubbles.—With fine camel's hair brush paint the model with investment, being sure that it is well covered about the sprue wire.—Moisten the inside of the flask or ring and place it over the model on the sprue former.—Carefully flow the investment into the ring. Allowing it to slide down the sides, at the same time lightly jarring with the spatula.—If the model is not well attached, it may be jarred off the wire and be lost in the investment.—The investment should be as promptly as possible filled into the ring after it is thoroughly mixed.—Twenty minutes to an hour is plenty of time for the investment to harden, loosen the sprue former by light taps and rotation. Press a cone-shaped instrument into sprue hole to pack the walls—and discover the wax model.

Directions for Using Taggart's Fluid Investment—

Fill the large cup with loose powder and scrape off level with a straight plaster spatula. Place the weighing device on the fulcrum and with a water syringe fill the small cup until it exactly balances. Then place the fingers over the powder and pour the water into a clean plaster bowl and add the powder. Spatulate for one minute, then jar and rotate the bowl for two minutes more. On account of the fluid condition of this mixture this prolonged manipulation permits all the air and gas bubbles to come to the surface. The inlay should first be painted with the investment material and the balance which just fills the ring, poured in such a manner as to permit it to trickle down the inside of the ring. Do not hurry the work, there is a good period of at least eight minutes, during which the material is workable, and in twenty minutes the wax can be burned out. Follow directions carefully, they are of vital importance. Nodules on inlays mean faulty manipulation. To eliminate them follow directions carefully.

Technique of Burning Out Wax—

Place investment ring with sprue former downwards on heavy metal plate over a Bunsen flame.—At first on the outer border, gradually moving it to the centre, where the greatest heat is.—Heat should not be raised above 320, at which temperature smoke appears.—When smoke seems to appear when the ring is moved, it is ready to cast.—A casting made before all the wax is burned out will have poor margins and will be shrunken, but if heated too much the molten gold will penetrate the investment, leaving a filling that won't set but will have good margins.—If the Jamison variety of casting machine is used, the ring is placed in the machine and a very low flame is allowed to play on it at first, gradually raising the temperature until all the wax is burned out.—If wax or water bubble rapidly out of the sprue hole, there is a poor chance of a successful casting.

Casting Machines—

Air pressure.—Gas pressure.—Steam pressure.—Centrifugal force.

Methods of Casting—

In foundries the metal is forced into the mold by its own weight. At first dental castings were made by this process. Taggart introduced a method of applying force to the molten metal so that it might more accurately fill the mold. Gas, air and steam are applied under pressure to the molten metal. The fewer the variable factors the more accurate and uniform the results. The Taggart machine and equipment for casting aim to eliminate the variable factors. The investment is weighed with the water. It is uniformly mixed at a definite temperature for a definite time. A definite bulk is used. It is allowed to set so many minutes. Heating is begun at a definite time after hardening. It is left to heat a definite number of minutes and not above 320 degrees. When almost cool enough to handle the ring the flask is placed in the machine. The gold is fused as quickly as possible with a gas and oxygen blowpipe until it globulates and dances in the crucible. A definite vapor pressure is applied to the molten metal. Experience has taught Dr. Taggart that if these details are not varied uniform results will follow. There is a reason for every step and should never be varied unless for a definite purpose. Uncontrollable factors even in this accurate technique: 1. The contact of the vapor over the end of the flask may allow variable leakage, especially under high pressures. 2. The area of the surface of the molten metal exposed to the vapor pressure is not always the same in different sizes of castings. 3. The exit for the vapor at the other end of the flask may not always be alike. 4. The temperature of the molten metal is not always the same nor is that of the flask or investment.

Effects of Variations in the Properties of Investments—Uncertain density porosity and shrinkage or expansion. The more dense the investment the more pressure required to force the air out of the mold ahead of the metal. The more porous the less the pressure. The denser the investment the greater the pressure tolerated from the molten metal without distortion. The less plaster of paris and yet enough for strength the less the chances for distortion of the mold from over-heating of the flask in drying out or from the over-heated metal. The finer the particles of the investment the smoother the inlay, but the less porous the investment, hence the greater the air pressure required. It may so contract from the ring that the air may pass down the sides and not force the metal into the mold at all. Non-porous investments do not work well in vapor pressure machines, and cannot be used in suction machines at all.

Effects of Variations in the Drying and Melting out the Wax—Too soon heating drives off the water of crystallization and leaves a soft investment. The bubbling out of either water or molten wax is liable to flake off or carry away the crystals of investment from the surface of the mold. Overheating destroys the texture of the plaster and allows distortions. Too long heating breaks up the crystals of the investment causing contraction, warpage and reduction of strength. The same occurs if investment is left too long standing before casting.

Effects of Over-heating Metal (Gold)—

Burns out the alloying metals (copper). Destroys the form or smoothness of the walls of the mold by disintegration of the plaster. The hotter the flask and investment. up to the point of destroying the plaster in it, the less heat required for the molten metal. Will not be solidified before the pressure is released, thus allowing the metal in the crucible to draw that in the mold back or allow contraction to two centres of bulk.

Effects of Under-Heating the Metal—

It fuses on the surface and sticks in the sprue, thus preventing the metal reaching the mold. It may fail to completely fill the mold. The metal will not be driven into all the fine lines or thin edges.

Effects of Excessive Pressure—

The metal is forced against the walls of the mold with such force that it will sink into the softer spots more deeply than other places, producing beads or lumps on the surface of the inlay. The investment may split, thus producing an inlay with thin wings of metal on opposite sides. The walls may be uniformly compressed so that the inlay will be too large for the cavity. Or the pressure may force the metal clear through the bottom of the flask or ring. The more fluid the metal, the less the pressure required.

Effects of Too Little Pressure—

The metal is not forced into the mold. The pressure must be maintained until the metal solidifies or it may pour back into the crucible or contract towards the larger bulk in the sprue head, or as often occurs in the suction machine, the inlay and the sprue head contract to their own centres and leave a contracted inlay separated from the head. The more suddenly gold is crystallized the less it contracts. An argument in favor of a cold mold for casting.

Compressed Air and Steam Pressure Machines—

These machines have all the possibilities of error that are found in the Taggart and many others because of inaccuracy of manufacture and an indefinite technique. There is no special investment suggested, no uniform or accurate method of mixing, and in many of them no method of determining the pressure applied. The rings or flasks are used as crucibles for melting the gold as if every investment would stand such usage and produce an accurate inlay. The rings are often inaccurately fitted and the controlling valve unworkable. The controlling valve comes so close to the molten mass that it sputters before closure is effected. The sprue former and sprue wire must be suited to the case in hand. Steam pressure is too inaccurate and indefinite to have a place in modern dentistry. It is not as good as placing the ring in a tin can with a bale fusing the metal in the top of it and swinging the can around a few times to force the metal into the mold. Such methods are arts, or tricks or stunts; having no place where accurate methods are available.

The Centrifugal Casting Machine—

A later introduction than gas, air or steam. It has the most uniform and unvarying possibilities of any method. A definite weight of metal revolving at a certain number of revolutions per minute on a certain length of arm will give uniform pressure without fail. Since the pressure is so positive and controllable, it may be easily varied in definite proportions by increasing or reducing the speed or increasing or reducing the weight of the metal. The pressure exerted on the walls of the mold is less influenced by the density or porosity of the investment. Pressure may be increased without a possibility of it escaping as in vapor pressure. Dense investments or non-porous models may be cast against with great force. There are two forms of centrifugal casting machines in common use.

Horizontal and Vertical—

The horizontal has the advantage of not using the ring as a crucible. There is no danger of over-heating the investment in fusing the gold in a horizontal machine. Most of the horizontal machines start off slowly and run a long time, thereby keeping up the pressure until the metal is cold. The vertical machines start off quickly, and unfortunately stop quickly. Some horizontal machines run with a crank which permits a quick or slow start, any speed, and for any length of time. There are so many variable factors, some controllable and some uncontrollable, beginning with the wax model and all the way through in making gold inlays that a definite and unvarying technique is required for each method pursued. Little of the technique is interchangeable. An investment suitable for a centrifugal machine might not do at all for a suction machine. A cold mold may be suitable for a Taggart machine but not a centrifugal. Gold alloyed with copper cannot be used with gas and oxygen heat without destroying it. If the mold is heated the gold doesn't need to be so hot. There is no royal road to successful casting. If full advantage must be taken of this wonderful process of making fillings, crowns, bridges and etc., all the underlying principles must be studied. or have an unyielding method and follow its rules, leaving those operations undone which cannot be made by the rule of thumb.

MANCHESTER CONFERENCE ON DISEASES OF THE TEETH

A Congress on the Prevention of Diseases of the Teeth promoted by the Food Education Society, was held in Manchester from May 13 to 15 to attack "the dental problem, which remains after ten years of the School Medical Service one of the most important, urgent, and difficult." The conference was opened by Sybil, Viscountess Rhondda. Sir William Milligan, who presided, said that the teeth of Jewish children were superior to those of Gentiles, and he suggested that differences of diet might be the cause of this. Professor Adami compared the teeth of people of this country unfavorably with those of Canada, and emphasized the need for such revision of the Dental Act of 1878 as would ensure that only fully qualified persons should be allowed to practice dentistry. He said that 10,000 additional qualified dentists were needed to care properly for the teeth of the country.

THE EXTENT AND CONSEQUENCES OF DENTAL DISEASE.

The British have the worst teeth of any nation. Diseases of the teeth include: (1) Irregularities; (2) loss from extraction and shedding; (3) decay; (4) disease at the apices; (5) pyorrhœa. Dental irregularities are practically universal. Some hundred million teeth have been extracted. About the same number have been spontaneously shed. The decayed teeth number some two hundred million; and about the same number of pyorrhœa sockets; finally there are some twenty million diseased roots. *At least nine-tenths of this is preventable.* The consequence of dental diseases are: (1) Malodorous breath; (2) unsightliness (from irergularities, decay, long teeth); (3) pain (toothache, pain inflicted by dentist, fear of dentist); (4) reflex disturbances; (5) defective mastication (causing indigestion); (6) secondary local disease (abscess and cancer): (7) blood poisoning (arthritis, neuritis); (8) economic loss (loss of time; need of supplying army of dental surgeons).—Harry Campbell, M.D.

CAUSE AND PREVENTION OF DENTAL CARIES.

Dental caries primarily results from the action of acid formed by bacteria from carbohydrate food located at certain points on the outside of the tooth. The location of the bacteria and carbohydrates determines the spot at which the decay commences. The amount of calcification of the tooth has nothing whatever to do with the location of this destructive mass of bacteria, nor do the imperfections of the microscopic structure of the tooth appear to influence appreciably the rapidity of the progress of the destructive process. The lodgment of bacteria and the fermentable carbohydrates result from any and all of the conditions which favor the retention of foods. The food itself may be of an adhesive nature, or it may not stimulate the self-cleansing processes, *e.g.*, the secretion of saliva or the motions of mastication and of the cleansing action of the tongue, cheek and lips. Again, the depth of the crevices in the teeth may vary. The greater the depth, the more likely are micro-organisms and carbohydrates to lodge so that the acids remain unneutralized and the spaces are not irrigated by the saliva.

Dental caries can only be prevented by physiological means, *e.g.*, (1) Mechanical (the motions of the jaws, tongue, lips and cheeks), and the action of foods with certain physical qualities, *e.g.*, fibrillar or spongy foods; (2) chemico-physiological, resulting from the activity of the glands of oral hygiene (mucus and saliva).—J. Sim Wallace, D.Sc., M.D., L.D.S.

DENTAL CARIES AND SWEETS.

Caries commences by the solution of the enamel of the teeth by acids formed from carbohydrates. The increase of caries during the last hundred years synchronizes with a great refinement of our starchy food, and a great increase and concentration of our sugary food. Caries is now almost universal, and its prevalence can only be explained by a cause acting universally and it has greatly increased during the last hundred years. Hence it would appear that over-refinement, concentration and excessive eating of carbohydrate foods are the essential causes of the increase. Recent investigations show that refined and "manufactured" foods are often much inferior to the corresponding natural foods. "Sugar" has been subjected to chemical and mechanical manipulation and is a very concentrated food. It is, moreover, eaten in the form of "sweets" between meals, when no food should enter the stomach. It is eaten without the accompaniment of vigorous mastication, which is probably the only true method of keeping the teeth free from acid-forming food deposits. These are the *a priori* grounds for considering that the eating of sweets is a cause for dental caries. The same reasons mostly apply to the eating of other concentrated sugary foods and to refined starchy foods. Inspections of school children in the County of Salop appear to furnish definite proofs of these propositions. The figures (which appear in the report of the Conference) are: (1) Those relating to children grouped according to the amount of sweets they were reported to eat; (2) pre-war figures compared with post-war ones.

Inferences.—From (1) that the eating of "sweets" is a cause of dental caries, but that there are other causes.

From (2) that there has been a very remarkable decrease of dental caries in the County of Salop since 1914. The decrease may be due to: (1) Restrictions and modifications of food. These were principally—*Sugar*: Rise in price. *Bread*: Offal was added to the flour, and pre-war extraction of grain, about 68 per cent., rose to 80 per cent. in 1917, and continued at about this figure to the present time; sale of new bread prohibition, crust eaten—not thrown away. *Milk*: Rapid rise in price and greatly diminished consumption.

(2) The energetic educational campaign by health visitors, medical officers, teachers, etc., in the county, or to both causes. Children aged 5 in 1920 were born in 1915 and have been subjected to war conditions during their whole life. It appears probable that the restriction of sugar, particularly in the form of sweets, and the modification of bread have been important determining factors. The inquiry is being continued.—James Wheatley, M.D., County and School Medical Officer, Salop.

THE EFFECT OF CERTAIN DIETETIC FACTORS ON THE DEVELOPMENT OF TEETH AND JAWS.

What are the dietetic factors, the presence or absence of which are responsible for the poor structure of the teeth of civilized man and for their liability to decay?

In respect of the dental apparatus the diet must be considered from two aspects: (1) The part played by foodstuffs while still in the mouth; (2) the part played after absorption into the general circulation. The latter aspect seems to be the more important. The first is important but probably not as great as some authorities think.

Research seems to show that there is some substance, which probably belongs to the group of foodstuffs known as vitamines or accessory food factors, that is of primary importance in the normal development and spacing of the teeth. This factor is referred to as vitamine X, but its properties and distribution appear to be very similar to those of fat-soluble A, with which it may be identical. There is no danger of lack of water-soluble B in a mixed diet, and there is little danger of a deficiency of the antiscorbutic vitamine, as long as the food has not been heated for too long a period. It is, however, common to find a diet in which vitamine X (or fat-soluble A) is deficient, for this substance, as will be seen, is on the whole associated with the more expensive articles of diet, such as eggs, butter, whole milk and animal fats. The importance of the presence of this factor is probably greatest during the period of most rapid growth, *i.e.*, from the first few weeks of ante-natal life until about the end of the second year after birth.

Experimental methods and results are given.

Puppies fed on Diet A, to which either cod-liver oil, whole milk, animal fats (except lard), some vegetable oils or egg-yolk, were added, developed normal teeth and jaw-bones. Whereas, those to whose diet linseed oil, babassu oil, some other vegetable oils, lard, separated milk, sugar, rice or oatmeal were added showed, according to their size and rate of growth, some or all of the following defects: (1) Jaw bones were soft, being composed largely of osteoid tissue; (2) teeth irregularly arranged; (3) delay in the eruption of the teeth; (4) defective enamel; (5) poorly formed and deficient dentine; (6) low calcium content of the teeth compared to their size; (7) a much diminished resistance to disease. A few experiments were done on pregnant and lactating bitches, which indicate the importance of vitamine X in the diet of the mother for the formation of normal deciduous teeth. Inter-globular spaces appeared in the later-formed dentine of the deciduous teeth of two puppies fed from birth by hand on a diet deficient in this factor. The amount of vitamine X necessary for the production of perfect teeth and jaws is related to (1) their rate of growth; (2) the energy-bearing constituents of the diet.—May Mellanby.

DIETETIC AND OTHER CAUSES OF IRREGULARITIES OF THE TEETH.

Irregularities of the teeth are due to (a) lack of development of the jaws; (b) mechanical factors; (c) transmitted tendencies, or to a combination of some or all of these. Among (b) the commonest are premature loss, or too late retention, of the milk teeth, whereby the incoming tooth is deprived of a guide, or deflected from its course by an obstruction; thumb, finger or comforter sucking; and mouth breathing which, by compelling the mouth to be kept open, deprives the upper jaw of the moulding action of the tongue. Premature loss of the temporary teeth is almost invariably due to extraction necessitated by caries which, in its turn, is largely promoted by the absence of hard, and the use of soft and sticky carbohydrate food.

Late retention of the temporary teeth may also be due to caries which, by causing the death of the nerve, interferes with the normal process of absorption. Hard food will displace a tooth which is ready to be shed, whereas soft food may not exert sufficient force to dislodge it. Lack of development of the jaws may be due to: (a) Defective action of the centres controlling growth, e.g., the thyroid and pituitary glands; (b) defective nutrition arising from the absence of the diet, of some substance necessary to health, e.g., vitamines (Mrs. May Mellanby); (c) lack of function. Vigorous use of the jaws in the thorough mastication of hard food increases their blood supply and promotes their growth. It necessitates the vigorous action of tongue and cheeks, which (the tongue pressing outwards and the cheeks inwards) guide the incoming teeth into even line, until they meet their opponents and are locked into place.

DIETETIC ERRORS CAUSING IRREGULARITY OF THE TEETH.

The quantity and the texture of the diet are both important. Deficiency of any essential factor, especially vitamines, in the diet of mother during pregnancy and lactation. Bottle feeding. Deficiency in the diet of the child of any essential factor, especially vitamines. Softness of diet, as it favors underdevelopment of the tongue and jaws, and the occurrence of caries. The more use, and the harder use to which the jaws are put, from birth onwards, the better.—J. H. Badcock, L.D.S., M.R.C.S., L.R.C.P.

DENTAL DISEASE AMONG NURSING AND EXPECTANT MOTHERS.

Long-standing sepsis in the mouth has been found to be a widespread cause of ill-health among working-class women in country districts as well as in towns. It assumes various forms and lowers their general health much below normal.

A case described of a breast-fed baby unable to digest its mother's milk was found to be due to oral sepsis on the part of the mother. After extraction of the teeth, the infant's condition rapidly improved. This case also showed that it is the *presence* of unhealthy teeth, not their *absence* which makes for harm. A second child was subsequently successfully fed.

Not enough attention is given to the effects of dental caries. The causes of ill-health in mother and child are often discovered. More commonly the dental disease is of a chronic kind, to the existence of which patients have become accustomed. Several cases are here quoted, from mothers attending consultations in East London, which point to the dangers arising from oral sepsis and the benefits from the removal of the bad conditions. Treatment should always be advised. The effects of oral disease frequently manifest themselves during pregnancy, and may in certain cases be responsible for the birth of weakly children.—Harold Waller, M.D.

"PYORRHOEA."

The chief cause may be found in the amount of highly refined, sticky, starchy food which forms such a large proportion of the average person's diet and which is driven by the tongue and cheeks between the teeth and on to and beneath the gum margin where it ferments. It causes inflammation of the gum margin, ultimately spreading to the periodontal membrane; the gum and this root membrane become absorbed, and tartar collects on the root and causes irritation; a "pocket" is formed below the level of the gum, where bacteria develop and form pus; the bony wall of the socket disappears; the patient probably suffers as the result of septic poisoning, and the tooth loosens.

Tooth brushing as usually practiced tends to inflame and cause absorption of the gums around and between the teeth, especially if tooth powders and pastes are driven into the interstices and under the free margin of the gum. Soluble preparations, such as salt or soap, are safest, as they soon wash away again. It is as unnatural to brush the mouth as to brush the stomach. The mastication of plenty of tough, fibrous food cleanses the mouth. There are many other factors causing pyorrhœa.

Decay causes loss of contact between adjacent teeth, allowing food to pack down between them on to the gum, eventually will cause pyorrhœa. A sensitive tooth or a missing tooth may cause the sufferer to cease using all the teeth on that side. Such teeth then get very dirty and their surrounding gums inflamed. Irregularity of the teeth, or any cause which impairs masticating power, has a similar effect.—F. M. Holborn, L.D.S.

IMPORTANCE OF DENTAL ATTENTION DURING FIRST DENTITION.

The normal infant develops twenty "milk" teeth, each consisting of a crown, protected by hard tissue, and a root embedded in the jaw. The central portion of each tooth contains blood-vessels and tissues necessary to impart life and sensation to the hard, outer casing. Not individual teeth, but the dentition as a whole, must be studied, to rightly appraise its value. The child depends on two dental arches, nicely adapted, for the seizing, rending and gnawing of food. A break in one arch means a corresponding loss of function in the opposing arch. The reduction of food to a proper consistency by chewing depends entirely on the temporary grinders till 6 years of age and partly until 10 years of age. During the period of greatest growth and development the maintenance of the correct interlocking of the first dentition is essential to mastication, to the development of the jaw by usage and to the correct adjustment later, by securing space, of the permanent teeth. In addition to the pain, due to the progressive decay, diseased temporary teeth have an injurious effect on the emerging permanent teeth, especially the six-year-old molar. To avoid the pain of biting on a tender tooth, solid food is "bolted," and this imperfectly chewed food causes indigestion, loss of sleep, nervousness, intestinal stasis, loss of strength through malnutrition, and a general lowered resistance to disease. The non-functional tooth is locally a focus for the collection of tartar filth. In due course the decay exposes the pulp, the septic inflammation extends to the tooth socket. An abscess forms, and pus from this is carried by the veins into the general blood-stream, giving rise to enlarged glands, and from these may start tuberculous infections. The coincident tenderness causes the mouth to be kept open, and thus leads to mouth-breathing, enlarged tonsils and adenoids, leading to catarrh, influenza, diphtheria and other affections. The pus "tracks" to the surface in the mouth, whence it is continually swallowed, or on to the face with subsequent disfigurement. The absorption of pus may cause rheumatoid arthritis, or more evident, though less serious, disorders of the skin. By pressure the abscess sometimes causes complete or partial fixation of the jaw, seriously complicating the surgical methods necessary to restore function. There is a liability for the jaw bones to become diseased, while dead pieces of temporary teeth cause scars on the tongue and cheeks liable to be serious in later life. Such pieces are not cast off by nature, but persist, causing irregularity of the permanent dentition. Affections of the eyes and ears may arise from decayed temporary teeth, which also increase the frequency and severity of nervous disorders, such as epilepsy and hysteria. With efficient dental attention no child need be exposed to these risks.—William H. Jones, M.A., L.D.S., Cambridge Borough Dentist.

THE TEMPORARY DENTITION IN HEALTH AND DISEASE.

The temporary teeth are of great importance to the child. Growth of the child requires nourishment, to replace the daily loss of tissue, also to add to its stature. The food should be well chewed, so that the body can extract the maximum amount of nutrition from it. An index to the value of the teeth to the child is to be found in the amount of their attrition. Marked attrition is no longer found in the adult as a normal occurrence, but it is a normal sign in the child. Although the immediate cause of dental caries is the fermentation of carbohydrate food, there are various predisposing causes; crowding of the teeth, poor structure of the enamel, malocclusion, the chief being an absence of a proper habit of mastication. This is a complex act in which the teeth, tongue, palate, lips and jaw all play a part, but the movements of the jaw are the most important and the other factors are dependent on them. Movements of the jaws are registered on the teeth in the shape of attrition marks in children. The chief wear occurs in the incisor teeth; the canines show less wear and the molars least. Hence the movements of the jaw in children is chiefly a forward one, with some amount of lateral movement. In the adult we find in those cases in which attrition is marked that the molar teeth showed marked attrition. This is caused by a lateral movement of the jaw, which is relatively greater in the adult than in the child. The wider range of movements in the adult are, in the opinion of the writer, initiated and established with the eruption of the permanent teeth, especially the molars. If there is any deficiency or perversion of the movements of the jaw in the child, we may expect this to be perpetuated in the adult. Evidence of this may be found in the existence of unilateral mastication in the adult, which cannot be accounted for by absence of teeth. In the child it is common to find unilateral mastication due to carious teeth. Later on the permanent teeth erupt and the movements of the jaw assume a wider range, but being grafted on these earlier movements which are restricted, so the later movements are also restricted. Very slight attrition is sufficient to cause a graduated path on the surface of the teeth which determines the future movements until unilateral mastication becomes a firmly fixed habit. This may have a direct bearing on the prevention of dental caries. If mastication is deficient, the liability for food to collect will be greater on the side which is less used, and the tendency to decay will also be greater. No matter, therefore, how detergent a food be used, the presence of unilateral mastication will act as a handicap to its success in preventing dental caries.—A. T. Pitts, D.S.O., M.R.C.S., L.D.S.

SOME THOUGHTS ON THE PROBLEMS OF THE PREVENTION OF DENTAL DISEASE AND IRREGULARITY.

Dental diseases are quite easily preventable, being the outcome of artificial modes of living and faulty diet.

Preventive measures include attention to the health of expectant and nursing mothers, as well as care in the feeding and management of young children. To secure strong teeth and healthy mouths, natural conditions of living must be reverted to, as far as possible, and is a question of food.

This must be of such a nature and consistency, and eaten in such a manner as to maintain the mouth in a *physiologically* clean condition and to provide sufficient *exercise* for the jaws.

Small babies should not be fed as though they were invalids, but should have hard coarse food.

Propaganda among the public is essential. Information and advice can be disseminated through the various health services, schools, organizations such as boy scouts, the public press, etc., as well as by special lectures, demonstrations and exhibitions.—C. Doswell Wallis, L.D.S. Eng., M.I.H.

EDUCATIONAL METHODS AMONG CHILDREN AND ADULTS.

The speaker described the work done by the Society, and gave striking examples of the results already obtained.—Charles E. Hecht, M.A., M.C.A., Hon. Secretary, Food Education Society, late National Food Reform Association.—The British Journal of Dental Science.

Dental Societies

DENTAL EXAMINATION RESULTS AT ROYAL COLLEGE OF DENTAL SURGEONS AND UNIVERSITY OF TORONTO

The results of the combined examinations of the dental department, University of Toronto and the School of Dentistry, Royal College of Dental Surgeons, are announced. Students who are deficient in any work will receive a detailed statement concerning the same, and are requested not to communicate with the college office until such statement is received.

PRE-DENTAL.

The following students have completed the work of the year:—Leo. F. Baer, Joseph Gruber, Lou D. Harris, Wilson Harron, W. L. Heaslip, S. W. Lasowsky, Alex. Liberman, Ed. B. Nind, John A. Sherman, A. D. Smith, S. Strauss.

The following students are required to complete credits as indicated:—I. Israelson (Chem., Biol.), Hewitt R. Kerr (Chem.), Jerome Lorentz (Biol.), H. A. Roodman (Biol.), R. Sidenberg (Biol.), R. S. Wessels (Chem., Bio., Eng., French).

Owing to the large number of returned men who registered in dentistry last session, it was necessary to duplicate the work of the freshmen year, and for this purpose the students were divided into two groups, A and B.

FRESHMEN A.

The following students have completed the work of the year:—Melvin Atkins, Alex. Wyllie Mahon Allan, Ernest Fraser Allen, William Murrell Arthurs, Wilbert Lloyd Attridge, Albert Lynn Baker, Robert John Beattie Bayne, Preston Andrew Beattie, John Cuthbert Blakey, Horace Colton Bliss, Robert Edwin Brayley, Andrew Patrick Brennan, Frances Marita Burnet, Lister Hugh Cameron, Allan Gordon Campbell, Neil Clark, Alfred Clermont, Allan Roy Cooke, Harry Martin Cooke, John Alan Cook, Dwight S. Coons, Stanley Herbert Corben, Adolph August Deegan, Frederick Garfield Dormer, Frank Henry Dunnett, Robert Murray Findlay, Walter Scott Flora, Norman Buchanan Forrester, Jesse Clair Fullerton, Robert James Gawley, Harvey Gellatly, Joseph Robert Graham, Earl Wilfred Grenzebach, Gordon Stewart Gropp, Donald Werden Gullett, James Campbell Guthrie, Irving James Hance, Percy Hill, Edgar Morley Honey, Reginald Grieve Huff, Robert Horton, Gordon Marshall Jackson, Norman William Janes, William Pembroke Jedd, James Garfield Johnston, George Eric Jordan, George Edward Julius, Vincent Kelly, Frederick Falls Kemp, William Oswald Laing, Harold Gordon Learoyd, William John Linghorne, Wallace W. McBain, Gordon Augustine MacBeth, Alfred Maitland MacCormack, James Archibald McGinnis, Harry Addison McIntyre, David Leslie Mackenzie, Bertha Maloney, Samuel Clifford Mann, Frank Martin, Cyril Henry May, Harold Drury Morris, Percy Wilfrid Morton, Hector Alexander Mutton, William McCauley Myles, Claude Arnold Nelson, Warren James Riley, Gabriel Acton Robinson, Byron Ross, Alonzo Eudo Saunders, Echlin Daniel Skuce, George Edward Staughton, Evan Alexander Stewart, Murray Cookman Sykes, Creel Armour Tanton, Robert Arthur Torrance, Cecil John Towner, Arthur Wesley Waring, Victor Stewart Wilson, Lorne Main Winter, Thomas Harold Young.

The following students have passed in all written subjects, but are required to complete technic; William Atkinson, Elmer Bruce Baker, Omar Baker, Wallace Walter Baxter, Frank Russell Bicknell, Riley Armstrong Bradford, Delmer Frederic Brownlee, Harold LeRoy Bruce, Allan Jordan Buchanan, Robert Walter Clements, Arthur Willard Coon, Edward Mark Crough, John Elwood Dobson, Clarence Alexander Dudgeon, James Edwin Dunham, John Frederick Edgecombe, Arthur Rowland Firstbrook, Irwin Ethelfred Fonger, James Archibald Graham, Maxwell Philip Heather, Gordon Arthur Hodgson, Walter Holland Irvine, Wilfrid Radford Junkin, Howard Joseph Lawrence, Frank Melville Lott, Robert Percival Lowery, Frank Joseph McGarry, Donald Snider McPhee, William Ellis Meldrum, James Ralph Mumford, William Killoran Prendergast, Oswald George Shepherd, William Leslie Trueman.

The following students are required to complete credits as indicated: Samuel James Allen (histology, pros. dent., tech.), Norman Charles Armitage (dent. anat.), Clarence Leonard Brady (chem., physiology), Earle Stanley Burrows (chemistry, (dent. anat., tech.), William John Butcher (chemistry, technic), William James Carson (dent. anat.), David Lloyd Curtis (chem., technic), David Russell Davies (dent. anat.), Norman Alexander Dobbie (chem.), William Edwin Dorsey (chem., technic, physiology), Frederick Norman Downe (chem.), Howard Russell Ferguson (chem.), James

Robert Fowlie (chem., physics, technic), Stratton Blair Gooding (chem.), Leslie Franklin Hare (chem.), James Douglas Wilmot Hindson (chem.), Ralph W. Huffman (chem.), Joseph Edgar Jackson (chem., dent. anat.), Oneitta Kinsella (chem.), George Weir Lyons (chem., physics), John Lorne MacDougall (chem., dent. anat.), Howard Thorold McLachlan (chem.), Frederick James MacLean (chem.), Cecil Donald McLeod (chem.), Harold Robert Miller (osteol., histol., dent. anat., tech.), Norman Lindsay Milne (chem., technic), Milton Montgomery (chem., histol.), James Roy Porter (chem.), Almond Keith Richardson (chem.), Joseph Michael Sedgwick (chem., technic), Gordon Chester Smith (chem., technic, physics), Frederic A. E. Starr (chem.), Richard Lane Treleaven (chem., histol., dent. anat., tech.), Ruth Vann (chem.), William Oswald Vrooman (histol., technic), Roy Victor Weston (histol., dent. anat., technic), Theodore Wiese (chem., technic), Harold Frederick D. Wilkes (chem., technic), Hyman Winkler (histology), John Waldo Woodley (chem., histol., dent. anat., tech.).

FRESHMEN B.

The following students have completed the work of the year:

Guy Livingstone Baker, Charles Lawson Beck, Wilson Bedell, Roy Stevenson Blackstock, Andrew Allan Boyd, Joseph Angus Boyd, William Frederick Bradley, Harry Melville Bradley, Garrett John Cameron, Ward Ferguson Clark, Arthur Albert Collins, Wallace McHardy Coutts, Harvey Hamilton Cowen, William Aubrey Crich, Duncan Alexander Currie, Wilbert Glenn Davis, Robert Alfred Dinniwell, James Howard Dougall, Donald William Duncan, William Cordingley Elkerton, John Gordon Elsey, Milton Hugh Fennell, Ellsworth Gibson, George Frederic Coy, Gordon Jacob Hartman, William Roy Hendry, James Arthur Hillier, James Fred M. Kennedy, Frank Vincent Patrick Kenny, Lee Albert Kilburn, George Alfred King, Gordon Roberts Lawson, James Percy Leighton, William James Milton Lloyd, William Ronald Louden, Hubert Clarence McDonald, Richard Hamilton McDougall, George McKay, Ellar McKeller, Dewey Legourie McKerracher, Wallace Lyle McLaren, William Currie McLean, Charles Stuart McLeod, Duncan Burns McMillan, Gerald Rowe MacRitchie, James Mandeville, Henry Phillip Mang, Harry Mills March, Vincent Alexander Martin, Philip Francis Metzger, Glenn Thompson Mitton, Charles Norman Morphy, Fred Jas. Netherton, Ralph Leo Aleris Noonan, Thomas Howard Norval, Lonnie Bangs Nuttall, Edwin Rodd Pearce, Heber Clinton Powell, William Hilliard Pritchard, James Glenson Pullar, Charles Murray Purcell, Harold Reilly, Everett D. Rivers, Percy John Ross, Eric Reginald Rowan, James Alban Rushton, Charles Wesley Sheridan, Leo Schumacher, Harold Roy Skilling, Herbert Harold Smith, Norman Clifford Smith, William Lorne Smith, Arthur Carey Steeves, Lloyd Alexander Stirling, Lloyd Johnson Stuart, Stanley Clifford Sudden, George Robert Thompson, Milton Scott Tucker, Charles Usher, Ernest Wallace, Lloyd David Walmsley, Elgin McKinnon Wansbrough, Harry Weatherby Weagant, Eugene Joseph Weiler, Frederick John Wentworth, Jonathan Wilkinson, John Maurice Williams, F. St. Clair Wilson, Richard Ernest Wilson, Alexander Ritchie Woods, Richard Elmore Wyatt.

The following students have passed in all written subjects but are required to complete technic:

Melvin Ray Blackburn, Harold MacKechnie Cline, Crawford Campbell Craigie, Gordon Ayres Dundas, Allan Wilfred G. Good, Gordon Tait Greig, Leo Dealy Kay, John Bevan King, John Harold Langtry, Keith McLaughlin, Walter Alexander Miller, John Garnet Mills, Reeve Wilson Morrison, Percy Pearen, George Edgar Renwick, Walter Howard Renwick, Harold Charles Richards, Leighton R. Sawyer, Earl Sherwood Somerville, John Leo Walsh, Robert Cecil Wansbrough, Walter Charles Ward, Thomas William Warner, William Andrew Weatherhead, Russell Allen Williams, J. J. Hartford, Ray Holland Wilson, Russell Albert Young.

The following students are required to complete credits as indicated: Gordon Allingham (dent. anat.), Thomas Francis Blight (chem., technic), Richard Nelson Garfield Brown (den. anat.(, Samuel Roland Bird (chem., physics), Arthur William Chantry (chemistry), Wilfred Clarence Coristine (chemistry), William Leslie Finlay (physics), Harry Elmer Hobbs (chemistry), Samuel Lee Honey (chemistry), Earl Clifton Jackson (chemistry), John Archibald Jackson (chemistry, physiology), Horace Hosner McArthur (chemistry, dent. anat., physics, technic), David Wallace McCord (chem., technic), William Hodnett Ferguson MacKenzie (chem., physiology, physics, technic), W. Chalmers McNichol (chem., physics, technic), W. H. McPhee (histol., dent. anat., physics, technic), Cecil Moyer (chemistry, technic), Robert Arthur Newlove (osteology), Harold Wilfred O'Brien (histology), Alexandra Ira Palmer (chem., technic), John Allen Phillips (chem., technic), Frank Joseph Reynolds (chemistry, histology, technic), Harry Alexander Robertson (chemistry), Clarence William Smythe (physics, technic), John Osborne Staughton (chemistry, technic), Roy Leslie Stephenson (chemistry, technic), Ermand Francis Stewart (chemistry, technic), Andrew Willard Taylor (dent. anat.), Frederick William Vivian (chemistry), Allan Bruce Wallace (chemistry), George Albert Clayton Walley (chemistry, technic), George Harold Weber (physiology), George Allan Wight (histology, dent. anat.), Russell Albert Young (dental anatomy).

SOPHOMORE REGULAR CLASS.

The following students have completed the work of the year: Harold George Armstrong, George Fred Atkinson, George Edward Balfour, Geoffrey Walter Bell, John Oswald Berry, Marlie Roy Berst, Stanley Braund, John Melvin Brewer, Irving Thomson Brill, Hilbert Lorne Burrell, Lorne Carter, Byron James Clark, Charles Cyril Collins, James Harold Conboy, Douglas Charles Coupland, Wilfrid Maitland Craig, Lee Franklin Culver, Harold Howard Cummer, Fenwick Elwood Curran, Arthur Greenwood Davidson, Harold Thornton Davidson, Roy Norman Davis, Evan Wellington Devine, Jack Hobbs Dewey, Joseph Antony Dietrich, Joseph Leslie Dickson, Braithwaite Dixon, Harold William Dickson, John Bellamy Donnelley, Robert Dunlop, Frank Webber Edwards, James DeLacy Evans, Harold Joseph Fahey, Joseph Feinberg, Roy S. Freele, William Henry Galloway, Joseph Albert Gauthier, Ben Garfinkle, Carl Letson Griffin, Jack Harry Griss, Henry Richard Hall, William George Hancock, Grant Errol Harper, Paul Harrington, John Stafford Harris, Ralph Gordon Harris, Hugh George Harvie, George Heidgerken, William Newton Hipwell, James Howard Helps, Aubrey Stuart Holmes, William Richard Jackson, Elda Muriel James, Lloyd A. Jaques, Marion Joy, Eugene Charles Keyes, Harry Landsberg, Wesley John Langmaid, John Marsh Lee, George Wilfred Long, Herbert Conrad Liesemer, Clive Walters Lyons, Edwin Arthur MacMillan, Dwight H. Mallory, Robert John Marshall, Gerald Michael Martin, Ivan Joshua Metcalfe, Florence Norma Mollins, Josephine Aileen McDonagh, Percy Ellicott McDonald, Roger Ralph Macdonald, Alma Lillian McEwen, Annie Sadie Mackenzie, John Edward McMulkin, William John Netherton, Emmett Joseph O'Brien, Charles H. Osher, Harold Slack Percival, John Frederick Porter, Clifford George Reid, William Reginald Reynolds, Dermot Rouse, Ernest Arthur Rupert, Donald Gordon Seaton, William Alexander Sharon, Robert Alexander Shields, Gerald Emmanuel Shragge, Roy Sims, Geo. LeRoy Smith, James Walker Smith, Morris Smoller, Cecil Merritt Snelgrove, Charles Wendell Soules, Willard Mackay Stevenson, Dwight Mason Turner, Douglas Sparling VanAllen, Roy Miles Elbert Ward, Clarence H. Watson, Milton Edward Webb. Robert Newell Webster, Roy James Whitaker, John McLeod Wilkinson, Bernard Willinsky, Murray Robert Wilson, Leo Clarence Yack, Wilfred George Yoerger.

The following students have passed in all written subjects but are required to complete technic: James D. Bell, Leverne W. Caldbick, Willard A. Gray, Shiavux N. Katrak.

The following students are required to complete credits as indicated: Vincent Armstrong (chem., chem. lab., technic, physics), Earl Robert Boyle (histol.), John T. Brown (chem., chem. lab., physics, technic), Stanley Brown (chem. F. and S., technic, F. physiology), Cyril V. Bussey (F. chem., F. physiology, technic), Roy S. Freele (chemistry), William James Gilbert (chem. lab., technic), Patterson Girvin (chemistry, physics), Samuel Philip Greaves (chemistry), Clarence William Hamilton (chemistry, anatomy), Robert James Harkins (chemistry, physiol., technic), James Howard Helps (physics), LeRoy Hibbert Holmes (chemistry, C. dent. anat.), Ronald Ransier Hudgins (chem. lab.), Frederick Alexander Janes (anatomy, technic.), Grenville A. Kerr (chem. F. and S., anatomy, physiol., technic., histol., physics), William James Kerr, (chem. lab.), William Nelson Lamond (chem., anat., physiol., technic), Abraham Charles Lane (chem. F. and S., chem. lab.), Harold J. Long (F. chem., physiol., histol., dent. anat., physics), Arthur B. Mair (anat., physiol., technic., histol., physiol., F. chem., pros. dent., dent. anat.), Robert J. Moore (histol., dent. anat., osteol., physiol., F. chem., technic.), James Alexander Munn (chemistry, lab., physics), Emil Lawson Murdoch (F. chemistry), George Louis McKibbon (chemistry, chem. lab.), Gordon Lee Prestien (chem., anat.), Clifford George Reid (physics), Robert George Reid (chem.), John Elliott Renton (chem., anat.), Harold Rich. Forbes Richardson (chem., chem. lab., physiol., physics, technic.), Charles John Rogers (chem. lab., physiol., physics), Samuel Rosen (anat., technic.), Bruno Joseph Rouleau (chem. lab., physics), Donald Gordon Seaton (physics), Lionel Sharpe (chem., chem. lab.), John Muir Shultis (physiol.), Saul Simon (chem. lab.), Geo. LeRoy Smith (physics), Albert Robert

John Snell (F. chem.), Harry Rex Sykes (pros. dent.), Eugene Underhill (chem.), Reid McDonald Virtue (chem., chem. lab.), Robert Newell Webster (physics).

SOPHOMORE—SERGEANTS' GROUP.

The following students have passed in all subjects upon which they wrote: Wm. G. Foster, Wm. J. Hall, L. J. Lequyer, H. G. Marshall, L. H. Wright.

The following students have passed in all subjects upon which they wrote, but are required to complete technic: Norman M. Allen, C. J. Bannerman, Ira W. Hamilton, J. L. Magrath, Miller Magrath, Gerald M. Philp, G. A. Robertson, George D. H. Seale.

The following students are required to complete credits as indicated: N. M. Allen (chem., chem. lab.), J. D. C. Barber (F. chem., technic, S. chem., chem. lab.), J. N. Blacklock (histol.), A. C. Blackwell (F. chem., histol., technic, physiol., physics. chem., chem. lab.), William G. Foster (physics), A. S. Funerton (chem. F. and S., chem. lab., physiol.), Wm. J. Hall (chem. F. and S., chem. lab.), I. W. Hamilton (chem., chem. lab., technic), K. R. Harris (physics, chem., chem. lab.), W. G. Hart (physiol., physics, chem., chem. lab.), Erol J. Hinds (chem. F. and S., histol., physics, chem. lab.), J. L. Magrath (chem., chem. lab., technic), Miller Magrath (chem., chem. lab., technic), H. G. Marshall (chem., chem. lab.), J. A. McConaghy (histol., technic), Gerald M. Philp (chem., chem. lab., technic), G. A. Robertson (physics, chem., chem. lab., technic), Geo. D. H. Seale (chem., chem. lab., technic), L. H. Wright (chem., chem. lab.).

SOPHOMORE—ARTS GROUP.

The following students have passed in all subjects upon which they wrote: S. J. Graham, H. N. Knight, J. S. Ritchie.

The following students are required to take further examinations in the subjects indicated: M. Miyaychuk (histol.), E. H. Niebel (histol., technic), John R. Parrott (F. chem., physics, technic), A. O. Parry (pros. dent., technic).

JUNIOR.

The following students have completed the work of the year: Harry Smith Abar, Harold Adams, Russel Bertram Adams, Robert Gordon Agnew, Herbert Ross Anderson, William Joseph Armstrong, Curtiss Willie Asselstine, Adolphus Frederick Barnes, Leslie Vernon Barnes, Aubrey J. T. Barton, Harry R. Bateman, H. Cameron Bayne, Newell Beattie, Russell James Beckett, Oszro Herman Bertrand, James Harold Best, William Blair Black, Harvey Samuel Bryans, Alvin Alexander Cameron, Wilfrid Daniel Clark, Hilliard McCauley Code, Leo Michael Coughlin, Aldrick F. Dales, Arthur Daly, Benjamin Davidson, Richard Ernest Dinniwell, Eric Raymond Dobbs, Lee R. Dodds, Cyril Augustus Elliott, Everett Victor Elliott, Bruce David Foster, John M. Gabriel, Leo Richard Garvey, Adlington Gott, Foster Melville Graham, Tevia Leib Granovsky, Clifford Albert Haines, Howard Harper, Howard Blair Hoar, William Harold Hunter, James Erle Irwin, George Gladstone Jewitt, Robert Edison Johnston, Unsworth N. Jones, Joseph N. Kennedy, Martin E. Killoran, John Amassa King, Margaret A. Kinsman, Clifford Hillis Munroe Laidley, Norman M. Layton, Leon Alphonse Letellier, Terrell Doswell Lewis, John Crother Lumb, Thomas Robb Marshall, Lawrence Melville Martin, Raymond Judd Mills, William Mitchell, Harry Moulson, Marguerite Ruth McAllister, Leonard Hugh McCool, Robert Clifford McCutcheon, James Cooney McGowan, Godfrey Gilford McKee, John Murray McLeod, James Ewart McMullen, Johannes O. Olson, Gordon Scarborough Paul, Mack Lancelot Pratt, Joseph Floyd Roberts, Rene Rochon, William John Rodwell, Clarence M. Rowsome, Clarence C. Smart, George Hillman Snell, Richard James Sockett, Charles Graham Stewart, Gilbert O. Stewart, Glenn Teal, Eber Rowles Upton, John Frederick Warnica, Robert R. Whitaker, James Patterson Whyte, Wilbert John Wilkey, Charles Beresford Wilson, Percy R. Wilson, Harold Lincoln Windrim, Russell Gilbert Woods, James Zimmerman.

The following students have passed in all written subjects, but are required to complete technic: John A. Butler, John T. Coyne, George W. Wagner.

The following students are required to complete credits as indicated: Samuel Clements Akins (oper. dentistry), John Wycliffe Bell (technic, crown and bridge, physics, histol., S. chem.), Oszro Herman Bertrand (physics), Alva Ogle Bradley (pharmacology), George Arnim Calbeck (pharm., oper. dent., techinc, S. physiol., S. chem.), Ellsworth Teasdale Campbell (oper. dent., dent. anat.), Elliott Rupert Dixon (pharmacology, S. physiol.), Norman Stewart Douglas (pharm., technic, dent. anat.), John Carl Duff (pharm., technic), Ira William Dunbar (physics), Wilbur Joseph Faulkner (pharmacology), Earl Garfat (metallurgy, technic, chem. F. and S.), J. O. Green (oper. dent., physics), Guy Burton Halladay (bacteriology, pharm., histol.), Russell George Hyde (oper. dentistry).

Christopher Norman James, (pharm.), Grant Johnston (technic, physics), Arnold Roy Kerr (bacteriology, technic, physics), John Amassa King (physics), Norman M. Layton (physics), William Mitchell (physics), Harry Moulson, (physics). Alexander Edward Murphy (pharmacology), Fred D. McClure (bacteriol., pharm., technic, physics, histol.), Allan Brown Macdonald (metallurgy, technic), Henry Earle McFeetors (oper. dent., technic, physics), Duncan McIntosh (technic, F. chem., histol.), William Franklin McLean (metallurgy, technic, S. chem.), John Moulton Partlo (pharmacology, oper. dent.), Thomas A. Provost (metal., pharm.), William James Robb (metal., S. chem., technic), Thomas Albert Robinson (metal., bact., pharm., S. chem., technic), John Lea Rogers (oper. dent., technic, physics), Lawrence Nicholson Ryan (pharm., physics), William Ernest Sheridan (S. physiol.), George Hillman Snell (physics), Joseph Alexis Spellman (F. chem., oper. dent., technic), Chas. Wellington Steele (oper. dent.), Fred L. Thompson (pharm., oper. dent., S. physiol.), Cecil Joseph Taylor (oper. dent.), George William Wagner (technic), W. E. Wessels (oper. dent.), Wilbert John Wilkey (physics).

JUNIOR—SERGEANTS' GROUP.

The following students are required to complete credits as indicated: Alex. W. MacKay (metallurgy, physics), A. B. Porter (metallurgy, technic, F. chem., chem. lab.).

CANADIAN DENTAL RESEARCH FOUNDATION

At the last meeting of the Canadian Dental Association, 1918, a committee was appointed to organize dental research through the official Dental Boards of the Provinces of Canada and other Dental Associations, and to solicit subscriptions for organized research work.

The committee, in co-operation with the Canadian Dental Association, decided that a fund of $100,000 should be established as a permanent memorial to dentistry's part in the war, and that the members of the dental profession be asked to contribute $50,000 of this sum, and public-minded citizens the balance.

The committee determined that it would be in the best interests of the Foundation to appoint a regular trust company to receive and hold all contributions as a trust fund, the interest only being available for current expenditures. The National Trust Company have been appointed to act as trustees, and all moneys received by the committee to date, amount-to $5,942.53, have been turned over to the Trust Company and placed to the credit of the Canadian Dental Research Foundation.

Plans are being perfected whereby every dentist in Canada will be asked to contribute to this Foundation, and it is hoped that every member of the profession will avail himself of this opportunity of thus becoming a member of this Canadian National Research body.

There will be little difficulty in raising $50.000 from the laity, if the members of the profession do their part and generously support this fund. A member of the committee has already received an unsolicited subscription of $25.00 from a business man who happened to hear of the establishment of the Foundation. Surely this should be a stimulus to those who are more familiar with the pressing need and great advantage that will accrue to humanity as a result of Dental Research.

There are many unsolved problems in dentistry, such as Relation of Diet to Dental Disease; Root Canal Technique; Chemistry of the Saliva; Bacteriological Studies in Gingivitis; Tissue Changes in Dental Foci of Infection; Operative and Prosthetic Problems, all having a direct bearing on daily practice.

The attention of the public is focused on dentistry as never before. Surely, if we desire to merit their esteem, we must rise to the opportunity and contribute to this worthy object.

The governing body of the Foundation will be most representative, made up of two members from each province, elected by the Provincial Research Committee, which Committee will be appointed by the Provincial Dental Board.

All contributions should be addressed to Dr. E. A. Grant, Associate Secretary-Treasurer, 229 College Street, Toronto. Make all cheques payable to the National Trust Company for Canadian Dental Research Foundation.

The following subscriptions have been received to date: Dr. W. B. Amy, $100; Dr. I. H. Ante, $25; Dr. W. A. Black, $50; Dr. L. H. Boyle, $10; Dr. A. B. Babcock, $20; Dr. T. E. Ball, Harriston, $10; Dr. T. E. C. Butler, $50; Dr. J. A. Bothwell, Stratford, $25; Dr. F. Cole, $5; Dr. Harold Clark, $100; Dr. J. A. Bothwell, Toronto, $25; Dr. F. J. Conboy, $125; Dr.

W. H. Coon, $100; Dr. W. L. Chalmers, $20; Dr. C. R. Collard, $50; Dr. G. H. Coram, $25; Dr. J. W. Coram, $50; Dr. C. A. Corrigan, $25; Dr. T. Cowling, $25; Dr. W. E. Cummer, $50; Dr. J. Duff, $10; Dr. L. Drew-Brook, $10; Dental Hockey Club, 1917, $1,877.53; Dr. H. E. Eaton, $100; Dr. B. O. Fife, $25; Dr. G. V. Fisk, $15; Dr. S. Frawley, $50; Dr. G. W. Grieve, $100; Dr. J. S. Graham, $100; Dr. E. A. Grant, $25; Dr. A. M. Hord, $10; Dr. F. C. Husband, $100; Hya Yaka Dance, $100; Dr. R. Haslett, $5; Dr. R. H. Henderson, $5; Dr. J. W. Ingram, $5; Dr. L. F. Krueger, $25; Dr. G. A. Lee, $10; Dr. W. C. Leggett, $5; Dr. J. J. Loftus, $10; Dr. T. H. Lewis, Jarvis, $15; Mr. W. C. Laidlaw, $25; Dr. C. E. Moyer, $10; Dr. F. W. Murray, $30; Dr. A. D. A. Mason, $125; Dr. R. G. McLaughlin, $100; Dr. R. G. McLean, $200; Dr. Wm. McGuire, Simcoe, $10; Dr. B. M. Ott, $10; Dr. J. S. Pilkey, $10; Dr. Weston Price, Cleveland, $50; Dr. F. D. Price, $50; Dr. C. E. Pearson, $100; Dr. E. W. Paul, $25; Dr. J. E. Rhind, $25; Dr. John F. Ross, $50; Dr. V. Rondeau Rouleau, $5; Dr. Chas. G. Scott, $10; Dr. C. A. Snell, $35; Students Parliament, R.C.D.S. 1919-20, $50; Dr. W. C. Smith, $110; Dr. Wallace Seccombe, $200; Dr. C. V. Snelgrove, $100; Dr. A. A. Stewart, $100; Students R.C.D.S. 1919, $760; Dr. G. W. Throsby, Montreal, $50; Dr. R. D. Thornton, $50; Dr. P. J. Watson, $5; Dr. J. White, $5; Dr. A. E. Webster, $50; in memory of the late Dean, J. B. Willmott, $100. Total, $5,942.53.

SECOND YEAR RESULTS IN DENTISTRY AT McGILL

The following results in the Faculty of Dentistry were posted at McGill University:

Second year prizeman: G. Franklin, Montreal.

Honors—Anatomy: Rosen, L. J.; Franklin, G. Physiology: Franklin, G. Dental Anatomy: Franklin, G.; Lank, H. H.; Rosen, L. J. Dental Histology: Swancesky, A. A.; Franklin, G.; Cross, M. E.; Rosen, L. J. (equal); Lank, H. H. Metallurgy: Franklin, G; Rosen, L. J.; Lank, H. H.; Crowe, A. D. Prosthetic Dentistry: Swancesky, A. A.; Crowe, A. D.; Burton, T. E.; Lank, H. H., equal with Rosen, L. J.; Franklin, G.; Dworkin, S. Operative Dentistry: Crowe, A. D., equal with Swancesky, A. A.; Burton, T. E.; Dworkin, S.; Franklin, G., equal with Rosen, L. J.

Pass List—The following, in order of merit, have completed the work of the second year and passed all the examinations as follows: Anatomy, physiology, dental anatomy, dental histolgy, metallurgy, pharmacology, prosthetic dentistry and operative dentistry: Franklin, G.; Swancesky, A. A.; Crowe, A. D.; Rosen, L. J.; Lank, H. H.; Burton, T. E.; Dworkin, S.; Kelly, G. P.; Gross, M. E.; Broderick, J. V.

THE AMERICAN ACADEMY OF PERIODONTOLOGY

PROGRAM FOR MEETING AT BOSTON

Friday, August 27th

9.00. *Registration.*—Reports of Committees. Election of new members. President's Address. Subject: Diet and Dental Diseases. Discussion: Doctor Percy Howe, Boston.

2.00. *Symposium*

Case Management.—Dr. Kirkland, Dr. Towner, Dr. Sarrazin.

Dr. Kramer.—"The possibility of Tubercular Infection through Gingival lesions." Report of Research of Woodman Sanatorium for Tuberculosis, Colorado.

8.30. Academy Dinner.

Early treatment of Periodontoclasia.—Dr. Ham.

Saturday, August 28th

9.00. Business Meeting. Election of Officers.

The Scientific Use of the Tooth Brush.—Dr. T. Sydney Smith.

Physiological Chemistry of Mouth Preparations.—E. D. Watkins, M.D., Memphis, Tenn.

OFFICERS OF THE SASKATCHEWAN DENTAL SOCIETY

President, Dr. A. L. Johnson, Regina; Vice-President, Dr. A. P. Slater, Saskatoon; Secretary-Treasurer, J. Silknitter, Regina; Educational Committee, Drs. Parker and Parkin, Regina, and Dr. Switzer, Saskatoon; Chairman of Research Work, Dr. Graham, Estevan; Auditing Committee, Drs. Barnes and Grant, Regina; Program Committee, Drs. Lane, Harwood, Dickson, Moose Jaw, Dr. Layng, Kerrobert, Dr. Ness, Cabri; Resolution Committee, Dr. Moyer, Rosetown; Drs. Ross and Irwin, Regina.

Editorial

EDITOR:
A. E. Webster, M.D., D.D.S., L.D.S., Toronto, Canada.
ASSOCIATE EDITORS:
Ontario—M. F. Cross, L.D.S., D.D.S., Ottawa. Carl E. Klotz, L.D.S., St. Catharines.
Quebec—Eudore Debeau, L.D.S., D.D.S., 396 St. Denis Street, Montreal; Stanley Burns, D.D.S., L.D.S., 750 St. Catherine Street, Montreal; A. W. Thornton, D.D.S., L.D.S., McGill University, Montreal.
Alberta—H. F. Whitaker, D.D.S., L.D.S., Edmonton.
New Brunswick—Jas. M. Magee, L.D.S., D.D.S., St. John.
Nova Scotia—Frank Woodbury, L.D.S., D.D.S., Halifax.
Saskatchewan—W. D. Cowan, L.D.S., Regina.
Prince Edward Island—J. S. Bagnall, D.D.S., L.D.S., Charlottetown.
Manitoba—M. H. Garvin, D.D.S., L.D.S., Winnipeg.
British Columbia—H. T. Minogue, D.D.S., L.D.S., Vancouver..

Vol. XXXII. TORONTO, JULY 15, 1920. No. 7.

TRAINED AND UNTRAINED HEALERS

During the whole history of man there have been trained and untrained healers of the sick. Some untrained healers are innocent believers in their own skill, while the majority are pure humbugs. It was never intended that man should be sick and suffering, but this does not hinder accidents which bring both. Good health is a normal condition.

It is marvelous what ignorance there is about the ordinary functions of life. Many otherwise sensible persons have a kind of superstition about disease, healing the sick, and death which is without reason or common sense. There is a mixture of religion, superstition, faith and tradition in the minds of most people about reproduction, life, sickness and death, though they see it all enacted in plants and animals about them. Educational authorities, physicians and clergy have done little to help to straighten out such matters in the minds of the people. We are told that Christ healed the sick, so we presume it is natural for the ignorant to think that surely there are others around who can do the same. The healing that Christ did was instantaneous and a demonstration to teach or serve a great purpose and done without medicine. It has never been shown that either the trained or untrained humbugs in healing or anyone else has done what Christ did. Healing, so far as history and common sense teaches, can only make progress in the hands of the trained.

It is quite evident that people lose their common sense about themselves as soon as they are sick. They go to the shoemaker to have shoes repaired, or the carpenter to have the door mended. They would think the person silly who would go to a blacksmith to have an eyeglass made, yet as soon as they are ill they get befuddled and are as likely to go to a preacher, a gardener, a wash lady, or a known faker, as to a trained healer. Just why the man who is not sick will recommend the sick to go to untrained healers and would recommend the same person to take his broken wagon to a wagon maker and not to a baker is difficult to fathom, except through generations of bad training. It is time that those who have clear notions on such matters should lay them before the people.

In all walks of life, except religion and healing, the advice of those trained in a subject is accepted as authority. No doubt the chief reason for want of confidence in the advice of those trained in healing and religion is the disagreement among those trained. This want of confidence is bred and fostered by the trained preacher or healer publicly pointing out the mistakes of others in his calling.

A PUBLIC DENTAL SERVICE

The view held by the authorities of the profession in Ontario is the same as that held in England on the question of the dresser, hygienist and nurse.

As to the further pressing question of a dental service for the public at large, the admirable report of the National Dental Service Committee shows ample evidence of the care and thoroughness which that body is giving to the complicated and by no means easy problems which the Board has handed over to it for elucidation. An important part of the report presented had reference to the vexed question of dental "dressers" and "nurses." This occupied a good deal of the Board's attention, the main outcome being a unanimous agreement as to the vital distinction to be drawn between the functions of the one and the other respectively. It was felt that the previous pronouncement of the Board could not be too emphatically re-affirmed, to the effect that "no dental operations, such as filling, extracting or sealing, should be performed by anybody but a qualified dental surgeon," whilst at the same time the employment of dental "nurses" as such might wisely be extended. The term "dresser" is understood to apply to the unqualified person—other than a dental student—whose services some educational authorities would make use of to perform actual dental operations, and it is such "dressers" that the Board, in the name of the Association, unhesitatingly deprecates. The term "nurse" is given to those persons who are trained to assist the dental surgeon, so as to enable him more efficiently and expeditiously to carry out his operations, but who are definitely debarred from operating themselves, and such "nurses"—limited to the performance of very useful but strictly non-operative functions—the Board, in the name of the Association, approves.

CANADIAN DENTAL ASSOCIATION MEETS IN OTTAWA IN AUGUST—ATTRACTIVE PROGRAM

The program of the Canadian meeting in Ottawa is very attractive. The most recent developments in the profession will be presented by the most able exponents of the various subjects under discussion. Dr. E. C. Kirk will discuss the professional and business relationship existing between Dentists, Inventors, Research works, Manufacturers and Dental supply people. Pointing a common interest and a common purpose more noble than getting of money.

Dr. Clyde Davis of the University of Nebraska will present for the first time the results of research work done in root-canal treatment which will be classic in dentistry. What has been suspected by Histologists for some time will be shown from clinical work to be correct. Root ends of teeth when properly treated will close of themselves and make a sealing which will ever after protect against infection. The methods of treatment to bring this happy result are sane, reasonable and above all capable of proof.

Dr. Wallace Seccombe will present the most hopeful and far-reaching subject in the treatment of dental diseases. It strikes at the very root of the question. Diet and its relation to Dental Diseases. When this problem is solved other methods of dental practice will be little needed.

Dr. Clarence Grieves, Baltimore, will classify the human teeth as to their possibility to cause focal infections. This is also pioneer work. Dentists have done little or nothing to determine which teeth are the most likely to bring about grave systemic diseases.

Dr. T. Sydney Smith, San Francisco, will give an illustrated address on some special features of focal infection having their origin in the teeth.

The Hamilton Clinic Club will present its demonstrations on the Hall method of construction and filling artificial Dentures. Besides this there will be many individual clinics.

Editorial Notes

Watch for the notices of the Canadian Dental meeting.

◆

Dr. Colin T. Campbell, Kentville, N.S., has moved to Penticton.

◆

The Canadian Dental Association meets in Ottawa, August 17, 18, 19, 1920.

◆

The Saskatchewan Dental Association held its annual meeting in Regina, Sask., June 28-29, 1920.

◆

The North Western University held a home-coming clinic on June 14th and 15th, during the commencement exercises.

◆

The recent graduates in dentistry of the University of Montreal have had their pictures shown in "La Patrie."

◆

At the recent official opening of the addition to the R.C.D.S. a portrait of Lt.-Col. H. R. Abbott, London, Ontario, was unveiled.

◆

The Canadian National Railways are pushing their route to the Canadian Dental Convention to be held in Ottawa Aug. 14, 1920.

◆

Dr. Lloyd Jones visited S.S. No. 5, Lundy's Lane, and examined the teeth of the school and found 80% requiring dental treatment.

◆

The following candidates sat for examination for the D.D.C. certificate at St. John, N.B.: D. S. Wilkes, Johnson Dore, P. T. Mann, M. E. Mann, Purdy D. Moore.

Because a tooth root is overlooked in extraction is no reason for a patient not paying her bill, so Judge Morson, Toronto, said in a recent Division Court case.

❧

The Rotary Club of Medicine Hat has offered to provide the necessary material for a dental clinic, the dentists to do the work and the School Board to supply the room.

❧

At a meeting of the Regina Dental Society on May 20, 1920, a collection of $110 was taken up for the Chengtu medical and dental college of the West China Union University.

❧

During this summer the Royal College of Dental Surgeons of Ontario will make another addition to its building to teach general anatomy, laboratory physiology, laboratory pharmacology, drawing and modelling.

❧

In this issue is an epitome of the addresses and essays given at the Manchester Conference on diseases of the teeth. It gives a fair estimate of the views held in Great Britain on this important question.

❧

The State University of Iowa will limit its freshman class 1920-1 to 80 students. For the first time it will demand a vocational test for each candidate. For the convenience of applicants these tests will be made in several centres in the State during the summer months.

❧

For the past few years the Canadian public have been spared from German scientific propaganda but it is again making its appearance. It is rustless steel in dental practice to-day and a cure for tuberculosis to-morrow. How these so-called German scientists get their stuff advertised in the Canadian public press without paying for it is a mystery.

❧

During the month of May, a number of the Belleville, Ont., dentists gave their services for the School Dental Clinic, in several cases finishing in their own offices work which could not be completed with the school equipment. The report for the month is as follows: Number children treated, 24; number fillings (amalgam), 34; number fillings (cement), 34; number extractions (permanent), 7; number extractions (deciduous), 12. During the month of June, Dr. Gerald Morton is giving his services daily, and a clinic is being held each morning.

ONTARIO GOVERNMENT DISPENSARIES

June 14th, 1920.

To the Dentists of the Province of Ontario.

Gentlemen:

The Ontario Temperance Act was amended at the last Session of the Legislative Assembly of Ontario, so as to permit a dentist to obtain from the Ontario Government Dispensaries as much as a quart of liquor, which is the maximum amount he may keep in his office. He is still, however, when obtaining liquor from druggists, confined to six ounce quantities. We have accordingly prepared a new requisition book to meet the change made by the Legislature, which will be ready for distribution within a very short time.

MANNER OF OBTAINING REQUISITION BOOKS, EFFECTIVE JUNE 15TH.

In order to obtain uniformity and to prevent fraud it has been decided, commencing June 15th, to issue requisition books of whatever classification from our Head Office, 31 Front St. E., Toronto. After the above date our Dispensaries will not be in possession of requisition books and therefore your request for additional books should be made out to the above address, c/o Inspection Department.

Will you please note that on receipt of a requisition book the acknowledgment slip in the front of same is to be filled out and returned to the above department and in order that no inconvenience may be caused, we would suggest your making a request for renewals in sufficient time that will allow of a new book reaching you prior to the exhaustion of the one in hand. Any further information regarding this circular, will be cheerfully furnished by the Inspection Department.

Yours very truly,

Ontario Government Dispensaries,
W. B. Cleland, General Manager.

P.S.—Address all correspondence to Ontario Government Dispensaries, Head Office, 31 Front St. E., Toronto. Attention Inspection Department.

A CORRECTION

By mistake a wrong heading appeared on a report published in the May issue. The heading read "Report of Research Committee of the University of Toronto." It should have read "Report of the Research Committee of the Canadian Oral Prophylactic Association."

St. John, N.B., June 2nd, 1920.

To The Editor, Dominion Dental Journal,
Toronto, Ont.

In the Editorial notes of the May issue of the Journal reference was made to the attempt to legalize in New Brunswick the practice of unqualified dental surgeons who claimed to be registered in Great Britain previous to 1890.

The bill as introduced by Mr. Hughes was not favorably reported upon and was withdrawn, but such was the instance of some members of the Legislature that a second attempt was made to "railroad" it through the House in the interests of the Mr. Gerrard mentioned in the Editorial note referred to. The Bill was read a second time, and it was only defeated by the entry of the Lieut. Governor to prorogue the House.

Two members of the Legislature in particular are to be commended for their stand on the question, viz: Messrs. Sweeney of Westmoreland and Tilley of St. John. These two members debated the matter at sufficient length to keep the question open till His Honor, the Lieut. Governor, appeared, when of course the Bill was killed.

One regrettable feature connected with the matter was the insistence with which one member of the Medical profession tried to force the Bill through. In committee he made the statement (according to the press) that he had had Gerrard work for him and he considered him well qualified to practice Dentistry. Therefore he felt he should be registered. I wonder what stand he would take if an unqualified Medical practitioner receiving the same kind of endorsation from a Dental practitioner sought to be registered to practice medicine in New Brunswick?

Following a conviction during the term of office of the former Lieut. Governor, Gerrard appealed, as the Dental Law permits to that official, and in the belief that the man convicted in the court held Certificates of registration in Great Britain, the conviction was quashed.

The certificates have never yet been produced, there is no evidence to show that he was ever registered in Great Britain, and it is within the bound of reason to suppose he never was registered. It is quite possible he did some dental work in England, but any one registered or not may under British laws do that. He must not however call himself a registered dental surgeon.

J. M. M.

Winnipeg, Manitoba.

Editor of the Dominion Dental Journal,
Toronto, Ont.

Dear Sir:

Due to the high rate of exchange with the United States the dental profession, as you are no doubt aware, is being charged exchange on all the gold they use, even when manufactured in Canada. The members of the Winnipeg Dental Society and the Manitoba Dental Association are up in arms against this situation, and wish that you would help to arouse the dental profession of Canada to some concerted action to remedy this matter.

The dental supply men here tell us that the Canadian manufacturers, in getting gold from the Mint, have to pay the United States exchange, and, of course, it is passed on to us. It would seem only fair that the Mint authorities should let us have the gold for manufacture at par, for surely some safeguard could be adopted to see that it reaches the profession for legitimate use and not be shipped across the line to save exchange on bills due. If the Government charge us the prevalent rate of exchange, whereas they have accumulated stocks of gold for years previous, I believe it is open to the charge of profiteering.

Hoping that through your Journal you will help us in this matter, I remain,

Yours sincerely,

C. P. Banning.

NURSE desires position with dentist; previous experience. Phone after 6, Main 6387 W. Miss Wooldridge, Apartment C, 91 Mutual Street, Toronto.

WANTED—Assistant for well established dental practice. Must be graduate, D. D. C. man or one qualified to secure Manitoba license preferred. Must be well recommended as to ability and character and capable of handling any branch of general practice work. Will pay salary to commence and would later consider partnership with right man. Apply H. E. Bewell, L. D. S., Dauphin, Man.

Dominion Dental Journal

Vol. XXXII. TORONTO, AUGUST 15, 1920. No. 8.

Original Communications

EARLY DIAGNOSIS OF PERIODONTAL DISEASES

J. H. Sterrige, L.D.S., London.

Too much stress cannot be placed on the importance of early diagnosis of periodontal disease, the incipient stage of which is far too often overlooked so that the disease, which has its origin in the gingival trough, is allowed to progress beyond the early infection of periodontal tissues, before it is recognized as of any importance. The gingival margins, when normal, are of tough bloodless tissue, of a clear pink hue, capable of resisting considerable pressure from tough foods during mastication without discomfort, redness, tenderness, or bleeding are clearly indicative of beginning inflammation, the causes of which should be diagnosed before it reaches the stage of acute congestion. Should any signs of abnormality be present, a minute examination of the gingival trough should be instituted, when invariably some foreign substance will be revealed, which accounts for this stagnation area in the tissues leading up to what will result in gradual deepening of the trough and breaking down of the thin epithelial layer of tissue overlying the poorly protected bony structure immediately underneath. The utmost importance should be placed on these signs, as the beginning of disease, and proper treatment advocated to avert the consequences of periodontal diseases, which almost invariably follow.

Passing from this early stage, symptoms are more easily diagnosed, but even then they are far too often looked upon as a gingivitis with no direct bearing on ultimate periodontal disease. The heaping up of the gum tissue, congestion with free bleeding on brushing or touching the gums (there being no visible pus) should be included in the possibility of septic infection having started in an unhealthy gingivus, in which a deepened gingival trough and damaged periodontal attachments, under influence of local irritants, will continue to break down until pus supervenes.

In well kept dentures, where daily hygienic measures have been taken, often none of the hyperemic symptoms are present, still a wasting of the gum tissue is evident with absorption of the alveolar bone, elongated necks of teeth are present, with disappearance of interdental papillae. In these cases examination of the roots of teeth made by passing a delicate hooked scale parallel with the long axis of the tooth, and scraping the surfaces under the thin taut overlying gum, will reveal a granular deposit of calcareous salts, firmly adherent to the surfaces of the roots. Often this irritant is only to be found on the surfaces of approximating roots in the form of sharp granules readily discernible by a scaler but often in the form of a dark hard crust, smooth on the surface and most tenacious, requiring considerable force to detach even a small bit of it. This condition should be recognized as slowly progressing periodontal disease, in which pathogenic micro-organisms play an important part. It is not caused by overbrushing as often designated.

Acute and chronic periodontal disease (pyorrhoea alveolaris) which is unmistakable, in which deep pockets are established, filled with decomposing food, epithelial debris and pus, with great loss of bony tissue and loosening of teeth, is but a continuation of the early stages described, which have progressed unrecognized by patient (and often by dentist) for many years before reaching the climax, which brings it into prominence.

The calcareous deposit referred to so far is by no means the sole diagnostic feature, many other causes require diagnosing, some of which are of a subtle nature requiring infinite care to recognize. Among these, faulty occlusion and undue stress are of importance. The common practice of extracting premolars or first molars to relieve "overcrowding of the arch" in the young, almost invariably leads to disturbing the balance in certain areas of the denture, as well as the creation of abnormal spaces, which results in time in periodontal disease. The loss of teeth from caries, usually the molars in either maxilla or mandible, especially when this is unilateral, and their place is not supplied with artificial substitutes, is a fruitful means of producing undue stress on other parts of the denture and supplying an irritant to the osseous frame and fibrous attachments of the teeth, by which periodontal disease can be maintained.

The palatal and lingual surfaces of the gingivus are frequently the sites of infection, when artificial substitutes for teeth impinge on these parts, most frequently is this noticeable in the mandible when the molars are lost and a plate is made to rest on the lingual surfaces of the incisors, absorption of the alveolus at the back allows the plate to settle down snugly on the front portion and provides a constant irritant acting injuriously on the gingivus and underlying bone. No form of treatment will succeed while this exists.

The faultily constructed shell crowns or banded crowns, where a space exists between the free edge of the metal and the root is an undoubted source of infection, which requires careful investigation, not that every crown of this description is necessarily a cause of infection, far from it, but it should be determined whether the free edge of metal is so well adapted to the circumference of root as to preclude any irritating influence on the gingival fold, either directly by pressure, or indirectly by retaining foreign matter in the space. Should congestion about the edge of a crown be present, it is necessary to determine whether faulty construction is responsible, or merely the spreading of infection from adjacent parts, accompanied by a general irritant cause, such as calculus and stagnant food. The same applies to bridges and all forms of fixed appliances. It is often necessary to condemn these as a source of periodontal disease, but when properly constructed, in the mouths of patients who are capable of carrying out proper daily hygienic methods, there is no reason why they should be condemned at sight, even when pyorrhoea symptoms are present in other parts of the mouth; and here it becomes necessary to determine the true cause of any inflammatory symptoms present and decide by accurate diagnosis the advisability of retaining a fixed appliance in the face of existing periodontal disease when treatment is to be undertaken.

In the undertaking of treatment of periodontal disease it is of the utmost importance to recognize the irritating nature of overhanging fillings, and faulty contour of fillings. This source of irritation, if not removed, will cause failure to preclude anything like permanent results by treatment, and recurrence, even after apparently good results, is unavoidable at those parts. Here radiography is invaluable in arriving at a sure diagnosis. A slight ledge may be detected by this means, which entirely escapes the exploring instrument. Inversely the existence of caries at or under the gum level provides an irritant cause, which requires detection, not only does the sharp edge of a cavity in contact with the gingival tissue produce inflammation, but the contained debris of decay and decomposed food provide a perfect pabulum, on which microorganisms thrive and keep up the source of infection.

Radiographs should be procured of all advanced cases of periodontal disease, without which it is difficult to diagnose the extent of the disease. It is important to determine the amount of destruction of bone, the depth of pockets, the condition of the bone, the presence of irritants such as subgingival calculus, faulty fillings or crowns. On the condition revealed a diagnosis can be made of the teeth which should be extracted. Many teeth which clinically appear hopelessly involved will present in the radiograph a healthy alveolus, with a well-defined linea dura about sockets, which are enlarged in consequence of undue stress. Such teeth can frequently be saved.

The presence of subgingival calculus is readily revealed when it exists on a surface of the tooth forming a shadow by the rays in the radiogram, and when seen is usually of the hard dark variety, which is most difficult to remove.

Faulty fillings and defective crown work are readily detected, and the condition of the bone in the latter is a guide to determining the advisability of recrowning in the presence of existing periodontal disease.

Valuable diagnostic information is afforded by correct reading of the condition of the bone, as shown in radiographs, by which the degree of absorption and rarefying osteitis can be accurately judged. If a perfectly defined linea dura is shown it would exclude to a great extent the probability of osteoporosis and infiltration of microorganisms deep into the bony structure, but if every trace of the linea dura has disappeared the bony structure presents a homogeneous radiolucent appearance, extensive rarefying osteitis with general bacterial infection can be diagnosed, which justifies the opinion of long standing periodontal disease of a serious character. So, too, an enlarged socket about the root of a tooth, where bony tissue has not absorbed to a great extent points to the possibility of undue stress causing movement of the tooth in its socket, and often gives the clue to this obscure cause of irritation and loosening of the tooth.

Diagnosis of the condition with relation to other existing pathological lesions, when it becomes necessary to determine the advisability of retaining teeth in spite of suspected toxic influence of organisms on the system, requires precise judgment of the extent of the disease and as to the possibility of retaining certain teeth in a functional and healthy condition after the most careful treatment. It must be borne in mind that conservative treatment is aided by the removing of the septic source, by improvement in the general health and with it the tissue at the local site of infection, so that the necessity for extracting every tooth from which pus exudes or may be expressed from its socket, does not apply as a hard and fast rule, but teeth, which after treatment cannot possibly be kept clean by the daily hygienic efforts of the patient, should at once be extracted, such as molars, when the alveolar bone has absorbed to such an extent that the bifurcation of roots is exposed, forming a receptacle for lodgment of food. Teeth which have pockets extending to the apices, when, on passing a probe, necrotic condition of the root can be felt, should be extracted.

Dead teeth, with chronic apical abscesses, are more to be feared in relation to constitutional disorders than the worst pyorrhoea conditions, and no tooth should be retained under those circumstances, unless the operator is convinced of a radical and speedy cure of the lesion by surgical methods.

In the molar region, advanced pyorrhoea, with deep pockets between the teeth, which, if the disease is checked by treatment, is liable to recurrence, it being beyond the patient to keep the space clean, and in view of toxemic effects, the extraction of the middle tooth, that is the second molar, often checks the disease about the two adjoining teeth, conserving those without fear of a potential source of infection.

In general it should be determined at the very outset what sources of infection exist which cannot be totally eliminated by treatment and proper after-care, and these should be removed at once, whether they be in the nature of crowns or bridges or hopelessly involved teeth, for fresh attacks aggravate the pathological lesions in other parts of the body, which do not then respond so readily to treatment.

TREATING PUTRESCENT TEETH

Dr. Cameron's Method.—Dr. Samuel P. Cameron, after nineteen years' experience, including seven years as Dentist-in-Chief of Girard College, having the constant care of some fifteen hundred boys, recommends the following method of treating putrescent teeth: The method of treating putrescent teeth in the Dental Department of Girard College to-day is to open these teeth carefully, applying 4 per cent. formalin, and by frequent applications of heated air, the formaldehyde gas is liberated, which joins the irritating gases and poisonous liquids, rendering them innocuous. By several applications of this kind and by removing the decomposed tissue as it is sterilized until near the end of the root, and then by modifying the strength of the drug to 2 per cent., the entire tooth is brought into an aseptic condition chemically. At the same time, by the use of drills and broaches, the root canals are enlarged and all septic material removed from the mouths of the tubuli communicating with the root canals. If the technique of this operation has been carefully and thoroughly adhered to, the tooth can be filled at once. By this method, in almost all cases, we can fill such a tooth at one sitting, saving a great many subsequent appointments. We feel, however, that it is conservative to seal a treatment of creosote in the canals for about seven days before filling.—Items of Interest.

TO PREVENT THE DECAY OF CHILDREN'S TEETH BY ATTENTION TO DIET

(1) Be sure that the child sleeps with the mouth shut and, when awake, breathes through the nose.

(2) From the age of two, let each meal contain some food that needs grinding.

(3) Do not drink until the end of a meal.

(4) Avoid many sweets and sweet biscuits, and only give them as part of a meal. Never give either the last thing at night.

(5) Let the child finish each meal with a piece of fresh fruit or crisp salad.

(6) If fruit is not obtainable, give a stale crust of bread, with butter if preferred, but not with jam.

Unless these rules are strictly adhered to, the child should brush the teeth well after each meal immediately on leaving the table.—A. L. Rowlett, British Dental Journal.

DOMINION DENTAL COUNCIL OF CANADA PROFESSIONAL EXAMINATIONS, 1920

MEDICINE AND SURGERY.

Examiner—Dr. C. N. Abbott.

Value. Question.

10 1.—What age would you consider the most desirable for cleft palate operation? State your reasons in detail.

10 2.—Describe the different steps to be taken in the treatment of Trigeminal neuralgia.

10 3.—Give the Etiology, Pathology and Symptoms of Tuberculosis of the Jaws.

10 4.—Describe what you consider the most satisfactory treatment for chronic Empyema of the Antrum. Give technique for entering the Antrum through canine fossa.

10 5.—What pathological conditions influence haemorrhage? What precautions would you take in operating surgically in such a case. Give prophylactic treatment to prevent untoward results.

10 6.—Describe in detail the six most important clinical forms found in Gonorrhoeal infection.

10 7.—Dicuss briefly oral focal infections and their relationship to systemic disease.

10 8.—Describe the three important physical signs found in mitral regurgitation.

10 9.—When is a carcinoma of the tongue operable?

10 10.—Describe the lesions found in the secondary stage of syphilis.

ORTHODONTIA.

Examiner.—Ross Thomas, D.D.S., D.D.C.

10 1.—Give the classification of the irregularities of the human teeth. State your authority.

10 2.—Define fully: Articulation, Occlusion, Anchorage, Retention, Facial Harmony.

10 3.—Define Frenium Labium. Tell all you know about it normal and abnormal.

10 4.—A patient presents with nose and throat badly filled up with adenoids and enlarged tonsils. Describe the condition and tell what you would advise the patient to do. Give prognosis of the result of the patient following your advice, also what you would say would happen if they do not.

Value. Question.

10 5.—Discuss fully the extraction of the six year molar. So many are extracted due to ignorance of their value as the key to the dental arch, also a great many have to be extracted on account of root end conditions.

10 6.—Discuss the value of the X-ray to the Orthodontist.

10 7.—Describe the peridental membrane and the alveolar process. Illustrate.

10 8.—What value will your knowledge of Orthodontia be to you in your practice? What is its future in Dentistry?

10 9.—What forces preserve the normal arches?

10 10.—Define anchorage. Illustrate your examples.

PROSTHETIC DENTISTRY, CROWN AND BRIDGEWORK AND METALLURGY.

Examiner.—John W. Clay, D.D.S.

15 1.—Give the technic of manufacture of a lower denture, with cast clasps, for the replacement of lost bicuspid and molar teeth.

12 2.—Give the exact technic for the taking of full upper impressions.

12 3.—Describe the setting up of teeth for a full upper and lower denture, models mounted on articulator.

15 4.—Describe the replacement by bridgework of a lost upper lateral tooth.

10 5.—Define and discuss removal bridgework.

12 6.—Give proper preparations of tooth for—

(a) Porcelain jacket crown.
(b) Gold crown.
(c) Porcelain crown.

12 7.—What compounds of silver are used in dentistry? What influence does the metal have on the various compounds of which it forms a part?

12 8.—Tell what you know about the uses of copper in dentistry.

OPERATIVE DENTISTRY.

Examiner.—W. A. Black, M.A., D.D.S., D.D.C.

10 1.—What is meant by Traumatic occlusion? What are its causes and results?

10 2.—What are the causes of active hyperemia of the pulp and how would you attempt to treat it?

10 3.—What are the causes of hypersensitive dentine and what remedies would you suggest?

Value. Question.

10 4.—Give technique of insertion of an amalgam filling in the disto-occlusal surface of a lower first molar, describing the complete operation including cavity preparation.

10 5.—What systemic conditions may develop as a result of apical infection? Discuss pyorrhœa in relation to general health.

10 6.—What teeth would you attempt to retain in the mouth by devitalization and root canal work.

10 7.—What class of teeth with infection at the apices would you attempt to treat and retain in the mouth?

10 8.—Diagnose and treat an acute alveolar abscess in a superior right lateral.

10 9.—Define facial neuralgia and what oral conditions may be responsible for it.

10 10.—Describe "trench mouth" giving its causes, symptoms and treatment.

DENTAL JURISPRUDENCE AND ETHICS.

Examiner.—H. G. Dunbar, D.D.S.

14 1.—Define: Compensation; Specialist; Contracts; Rescission; Hearsay; Evidence; Privileged Communications.

12 2.—(a) Does the dental degree imply the right to administer general anesthetics.

(b) Is the failure or refusal to administer an anesthetic a ground for action for malpractice.

12 3.—(a) Enumerate some of the grounds for the revocation of a license by the board issuing same.

(b) Give examples of unprofessional conduct.

14 4.—Define Malpractice and discuss the probable effects in cases where the following could be proven:

(a) Gross negligence.
(b) Inadvertant mistake.
(c) Error of judgment.

12 5.—Why are commercial methods of advertising not permissible in the practice of a profession.

12 6.—Give most important clauses in code of ethics.

12 7.—Discuss the advantage in the dentist having the M.D. degree.

12 8.—In the order of their importance give the objects of legislation to regulate the practice of dentistry.

MATERIA MEDICA AND THERAPEUTICS.

Examiner.—William P. Broderick, D.D.S.

Value. Question.

10 1.—Give derivation and dental uses of the following:—Eucalyptus, Creosote, Tinct. Iodine, Nitrate of Silver, Arsenious Acid, Chloroform, Hydrochloric Acid, Potassium Nitrate, Peroxide of Hydrogen, Sulphate of Zinc.

10 2.—Differentiate between a volatile or essential oil and a fixed oil and give examples and dental uses.

10 3.—(a) Write a prescription for a mouth-wash containing Tinct. iodine.
(b) For a tonic.

10 4.—(a) Give derivation and dental uses of Cocaine Hydrochlorate:
(b) Your method of using it for pulp extirpation.
(c) Define Infiltration and Conductive Anaesthesia.

10 5.—Define: Tincture, Incompatibility, Caustic, Hypnotic, Distillation, Hyperemia, Alkaloid, Pyemia, Anodyne, Abscess.

10 6.—Explain the action of Counter-irritants; mention those most frequently used and in what cases are they indicated.

10 7.—Give (a) etiology of Pyorrhœa Alveolaris: (b) Your method of treatment.

10 8.—Describe your method of pulp extirpation with arsenious acid and explain its physiological effects on pulp tissue.

10 9.—(a) What is emphema of the Antrum?
(b) Give treatment.

10 10.—How can abscessed teeth affect the general health and describe general treatment for same.

ANESTHETICS.

Examiner.—Dr. W. B. Steed.

10 1.—Define the following terms:—Anesthetics, Narcosis, Analgesia, Amnesia.

10 2.—Give a brief history of Anesthesia.

10 3.—Outline the general rules respecting diet, prior to, and after anesthetization. Is milk a good form of diet previous to anesthetization? Give reasons.

Value. Question.

10 4.—Describe the administration of Nitrous Oxide for a prolonged operation. State the effect on, respiration, heart, pupils, reflexes, and general metabolism.

10 5.—Describe accurately one method of artificial respiration.

10 6.—Summarize the qualifications of a local anesthetic solution.

10 7.—(a) Discuss the importance of an isotonic solution, and describe the effect of any variation on tissue cells.

(b) Name advantages and disadvantages if any of the addition of adrenalin hydrochloride to a local anesthetic solution.

10 8.—(a) Mention preliminary agents used to relieve the hypersensitive or hysterical patient of the feeling of anxiety or apprehension. Give dosage of each.

(b) Give details involved in obtaining perfect success in the use of local anesthetics.

10 9.—Describe in detail the blocking of the Inferior Dental lingual Nerves. Which Dental operations can be performed from this injection alone, and on which teeth.

10 10.—Give the technique of the injection at the mental foramen, and of the posterior superior alveolar nerve.

ANATOMY.

Examiner.—C. H. Weicker, D.D.S.

12 1.—Describe fully the Lingual artery.

12 2.—Describe the Lesser and Greater Wings of the Sphenoid bone.

16 3.—Give the origin and distribution of the Facial artery.

12 4.—What bones enter into the formation of the Orbital cavities?

12 5.—Describe the Hypo-Glossal nerve.

12 6.—Give the origin, insertion and action of the four principal muscles of mastication.

12 7.—Give origin, insertion, nerve supply and action of the Digastric muscle.

12 8.—Describe fully the Lingual nerve.

CHEMISTRY AND PHYSICS.

Examiner.—Harry S. Thomson, D.M.D.

Value. Question.

10 1.—How do acids and bases differ in properties? Outline one method of preparing (1) Acids, (2) Bases. What are the products of the union of an acid and a base? Equate three such unions.

10 2.—You are given several jars of chlorine gas. What experiment would you perform in order to exhibit the chief properties of this gas? How is this gas prepared? Equate.

10 3.—Equate what chemical reactions occur when—

(a) Water is put upon quicklime.
(b) $H.Cl$ is put upon zinc.
(c) $CO2$ is put into limewater.
(d) Charcoal is burned and the product dissolved in water.
(e) Iron filings and sulphur strongly heated in an ignition tube.
(f) Potassium is put upon water.
(g) Silver is dissolved in dilute nitric acid.
(h) $K\,C\,L\,O3$ is strongly heated in a test-tube.

10 4.—(a) How much zinc will be used up in producing 100 grams of hydrogen by the action of hydrochloric acid?

(b) How much limestone ($caCO3$) is required to produce 560 pounds of quicklime ((CaO))? (Ca-40).

10 5.—To what is the dampness of night air due? (b) What causes the mercury to move up and down in the tube of a thermometer? Of a barometer? (c) Why does a stone weigh less in water than in air? (d) How could you quicken the vibration of a pendulum four-fold?

10 6.—(a) Why will ice float in water but not in alcohol? (b) Distinguish between dew and fog. (c) How could you prove by experiment that air is matter? (d) Describe the action of a siphon.

10 7.—Give the formula and properties of: (a) Hydrochloric acid. (b) Sulphuric acid. (c) Sulphurous acid. (d) Phosphoric acid. (B) Place the chemical formula after each of the following compounds—Hydrogen sulphide, Potassium iodide, Calcium sulphite, Magnesium carbonate and Mercuric chloride.

10 8.—What is $CaSo$ and what are the uses in dentistry?

Value. Question.

10 9.—Make a dental alloy for filling material. State the order in fusing the metals. Give the requisites of a correct alloy.

10 10.—Give the physical properties of silver and state its most important salt.
Define the use in dentistry of silver.

PATHOLOGY AND BACTERIOLOGY.

Examiner.—Dr. D. N. Ross.

12 1.—(a) Name and describe the various deposits found upon the teeth.
(b) Give the pathology of pyorrhœa alveolaris.

12 2.—Give a full description of an epithelioma of the lip.

10 3.—Define a wound. Name the varieties.
(b) Describe the process of healing in a non-septic wound.

10 4.—How would you distinguish between a simple and malignant tumor? Give two examples of each.

12 5.—What are the essential pathological features of a syphilitic lesion?

12 6.—How do bacteria multiply? What is meant by spore formation, its purpose, and name four bacteria with this property.

10 7.—Describe the defensive factors against infection found in the blood.

12 8.—Tell how bacteria are affected by Light, Temperature, Oxygen, and Moisture.

10 9.—Give the common routes of infection. What is meant by the virulence of bacteria and give methods by which this quality may be modified.

PHYSIOLOGY AND HISTOLOGY.

Examiner.—A. W. Cogswell, M.D., C.M., D.D.S.

10 1.—Name the circulating fluids which have been distinguished in the higher animals.

10 2.—Describe the blood.

10 3.—Describe coagulation of the blood.

10 4.—Describe the circulation of the blood from the Right Auricle to the Left Ventricle, indicating the chemical changes taking place in it during its passage.

10 5.—Name and give the chemical action of the Digestive Juices in the process of digestion, commencing at the Aural Cavity.

Value.	Question.
10	6.—Describe the process of cell division.
10	7.—Name and describe briefly the different varieties of epithelia.
10	8.—Describe bone tissue—compact and cancellated.
10	9.—Describe briefly the structure and development of the teeth.
10	10.—Describe briefly the structure of medullated and non-medullated nerve fibres.

DOMINION DENTAL COUNCIL EXAMINATIONS, 1920

The following have passed in Physics and Chemistry.

C. J. Bannerman, W. M. Box, A. J. T. Barton, H. C. Bayne, H. G. Brownlee, M. R. Berst, F. W. Beach, G. A. Buttery, J. T. Countryman, H. M. Code, V. A. Clark, B. J. Charles, A. G. Davidson, H. T. Davidson, J. H. Fraser, Geo. Green, J. N. Gabriel, J. A. Graham, J. H. Herrington, A. C. Haywood, M. J. Heney, W. H. Hunter, W. L. Hugill, H. R. Hall, H. N. Knight, M. A. Kinsman, E. C. Keyes, W. J. Langmaid, R. J. Mills, R. J. Marshall, T. R. Marshall, W. R. Morrison, Norman Mollins, Annie S. Mackenzie, R. R. MacDonald, A. W. MacKay, W. D. MacLeod, Aileen McDonagh, Hugh McCrostie, W. J. Netterton, E. H. Neibel, C. E. Stewart, H. E. Smith, G. E. Teale, P. H. B. Wood, N. G. Webb, R. R. Whittiker, L. C. Yack, J. Zimmerman.

The following have passed in Physiology and Histology.

C. J. Bannerman. W. M. Box, J. D. C. Barber, A. J. T. Barton, J. O. Berry, M. R. Berst, F. W. Beach, G. A. Buttery, H. H. Cummer, H. M. Code, V. A. Clark, I. W. Dunbar, A. G. Davidson, H. T. Davidson, W. Ewart, J. E. Fraser, Geo. Green. C. C. Graham, J. M. Gabriel, J. A. Graham, J. H. Herrington, A. C. Haywood, M. J. Heney, C. W. Hamilton, W. H. Hunter, W. L. Hugill, H. R. Hall, Marion Joy, W. J. Kerr, M. A. Kinsman, L. J. Lequeyer, R. J. C. Lumb, W. J. Langmaid, R. J. Mills, H. G. Marshall, R. J. Marshall, T. R. Marshall, Norman Mollins, Annie S. MacKenzie, R. R. MacDonald, A. W. MacKay, W. D. MacLeod, R. C. MacLaughlin, Norman McD. Allen, Aileen MacDonagh, Hugh McCrostie, W. J. Netterton, G. H. Niebel, J. Olson, C. F. N. Purdy, W. A. Pommer, G. D. Searle, C. E. Stewart, H. E. Smith, Z. I. Trowean,

G. E. Teal, P. H. B. Wood, M. G. Webb, C. B. Wilson, L. H. Wright, R. R. Whittiker, L. C. Yack, J. Zimmerman.

The following have passed in Anatomy.

C. J. Bannerman, W. M. Box, J. D. C. Barber, A. J. T. Barton, J. O. Berry, M. R. Berst, G. A. Buttery, H. H. Cummer, H. M. Code, B. J. Charles, V. A. Clark, I. W. Dunbar, A. G. Davidson, H. T. Davidson, J. D. L. Evans, W. Ewart, H. J. Fahey, J. E. Fraser, G. Green, J. A. Graham, J. H. Herrington, A. C. Haywood, M. J. Heney, W. H. Hunter, W. L. Hugill, H. R. Hall, Marion Joy, W. J. Kerr, H. N. Knight, M. A. Kinsman, E. C. Keyes, A. G. Lough, L. L. Lequeyer, R. J. C. Lumb, R. J. Mills, M. Milraychuk, H. G. Marshall, R. J. Marshall, T. R. Marshall, W. J. H. Millar, N. Mollins, Annie S. MacKenzie, H. W. MacDonald, R. R. MacDonald, A. W. MacKay, Norman McDeallen, Aileen McDonagh, Hugh McCrostie, W. J. Netterton, E. H. Niebel, C. F. N. Purdy, W. A. Palmer, G. D. Searle, J. N. Shultis, C. E. Stewart, H. E. Smith, Z. I. Trowean, P. H. B. Wood, M. E. Webb, L. H. Wright, R. R. Whittiker, L. C. Yack.

The following have passed in Materia Medica and Therapeutics.

D. Adams, H. S. Abar, J. H. Best, W. M. Box, A. J. T. Barton, H. C. Bayne, W. B. Black, H. M. Brown, F. W. Beach, G. A. Buttery, L. V. Barnes, V. D. Crowe, F. M. Corbett, J. G. Countryman, H. M. Code, V. A. Clark, G. C. Caldwell, B. J. Charles, J. C. Doore, I. W. Dunbar, E. R. Dixon, H. R. Day, C. A. Elliot, W. Ewart, J. E. Fraser, C. C. Graham, T. L. Granovsky, J. M. Gabriel, G. Gott, J. A. Graham, J. H. Herrington, M. J. Heney, H. B. Hoar, F. W. Johnson, M. A. Kinsman, R. J. C. Lumb, C. T. Moyle, H. E. Mann, F. G. Mann, J. J. Moffatt, R. J. Mills, T. R. Marshall, W. R. Morrison, W. J. H. Millar, R. R. McIntyre, Ruth McAllister, A. W. MacKay, W. D. MacLeod, R. C. McLaughlin, R. C. McCutcheon, Hugh McCrostie, J. Olson, A. M. Palmer, C. C. Smart, C. E. Stewart, H. E. Smith, C. N. Trueman, G. E. Teal, Upston, P. H. B. Wood, C. B. Wilson, W. E. Wessels, W. R. Wilkes, R. R. Whittiker.

The following have passed in Pathology and Bacteriology.

H. Adams, J. H. Best, W. M. Box, F. W. Beach, G. A. Buttery, L. V. Barnes, L. H. Croft, F. N. Corbett, J. G. Countryman, V. A. Clark, G. C. Caldwell, B. J. Charles, J. C. Doore, H. R. Day, C. A. Elliott, W. Ewart, R. F. Fralick, J. E. Fraser, C. C. Graham, T. L. Granovsky, J. A. Graham, N. W. Haynes.

J. H. Herrington, M. J. Heney, W. H. Hunter, E. J. Hesson, H. B. Hoar, F. W. Johnson, R. J. C. Lumb, C. T. Moyle, H. E. Mann, F. G. Mann, F. J. Moffatt, R. J. Mills, W. R. Morrison, W. J. H. Millar, J. D. Morrison, R. R. McIntyre, Ruth McAllister, W. D. MacLeod, L. E. McLachlin, R. C. McLaughlin, R. C. McCutcheon, R. N. McVicar, G. H. McKee, Hugh McCrostie, A. M. Palmer, C. C. Smart, C. E. Stewart, H. E. Smith, C. N. Trueman, G. E. Teal, Upston, P. H. B. Wood, C. B. Wilson, W. E. Wessels, W. R. Wilkes, R. R. Whittiker, J. Zimmerman.

The following have passed in Orthodontia.

C. C. Clermont, W. M. Box, H. G. Brownlee, H. M. Brown, I. M. Benezra, F. W. Beach, G. A. Buttery, L. H. Croft, B. R. Coysh, J. G. Countryman, V. A. Clark, G. C. Caldwell, B. J. Charles, J. C. Doore, H. R. Day, W. Ewart, R. F. Fralick, J. E. Fraser, C. C. Graham, G. A. Gemeroy, G. A. C. Gunter, J. A. Graham, N. W. Haynes, J. H. Herrington, M. J. Heney, P. C. Hughes, E. J. Hesson, F. W. Johnson, C. T. Moyle, H. E. Mann, F. G. Mann, J. A. Milne, F. J. Moffatt, W. R. Morrison, W. J. H. Millar, J. D. Morrison, R. R. McIntyre, W. D. MacLeod, L. E. McLachlin, R. C. McLaughlin, R. N. McVicar, G. H. McKee, Hugh McCrostie, A. M. Palmer, W. A. Pommer, H. A. Ross, C. E. Stewart, H. E. Smith, C. N. Trueman, P. H. B. Wood, W. R. Wilkes.

The following have passed in Prosthetic Dentistry (Paper).

C. C. Clermont, W. M. Box, H. M. Brown, I. N. Benezra, F. W. Beach, G. A. Buttery, L. V. Barnes, L. H. Croft, B. R. Coysh, J. G. Countryman, V. A. Clark, G. C. Caldwell, B. J. Charles, J. C. Doore, H. R. Day, W. Ewart, R. F. Fralick, J. G. Fraser, G. A. Gemeroy, G. A. C. Gunter, J. A. Graham, N. W. Haynes, J. H. Herrington, M. J. Heney, E. J. Hesson, H. B. Hoar, F. W. Johnson, R. J. C. Lumb, C. T. Moyle, H. E. Mann, F. G. Mann, J. A. Milne, F. J. Moffatt, W. R. Morrison, W. J. H. Millar, J. D. Morrison, R. R. McIntyre, W. D. MacLeod, R. C. McLaughlin, R. C. McCutcheon, Hugh McCrostie, A. N. Palmer, W. A. Pommer, C. C. Smart, J. M. Shultis, H. E. Smith, C. N. Trueman, P. H. B. Wood, W. R. Wilkes.

The following have passed in Operative Dentistry (Paper).

C. C. Clermont, W. M. Box, H. M. Brown, I. N. Benezra, F. W. Beach, G. A. Buttery, L. H. Croft, B. R. Coysh, J. G. Countryman, V. A. Clark, G. C. Caldwell, B. J. Charles, J. C. Doore, H. R. Day, W. Ewart, R. F. Fralick, J. E. Fraser, G. A. Gemeroy, G. A. C. Gunter, J. A. Graham, N. W. Haynes, J. H.

Herrington, M. J. Heney, P. C. Hughes, E. J. Hesson, F. W. Johnson, C. T. Moyle, H. E. Mann, F. G. Mann, J. A. Milne, F. J. Moffatt, W. R. Morrison, W. J. H. Millar, J. G. Morrison, R. R. McIntyre, W. D. MacLeod, L. E. MacLachlan, R. C. McLaughlin, R. N. McVicar, Hugh McCrostie, W. A. Pommer, A. M. Palmer, C. E. Stewart, H. E. Smith, C. M. Trueman, P. H. B. Wood, W. R. Wilkes.

The following have passed in both Operative and Prosthetic Dentistry (Clinical).

C. C. Clermont, W. M. Box, H. G. Brownlee, H. M. Brown, F. W. Beach, G. A. Buttery, L. H. Croft, B. R. Coysh, J. G. Countryman, V. A. Clark, G. C. Caldwell, B. J. Charles, J. C. Doore, H. B. Day, W. Ewart, R. F. Fralick, J. E. Fraser, G. A. Gemeroy, J. A. Graham, J. F. Giffen, W. A. Hartley, N. W. Haynes, J. H. Herrington, M. J. Heney, P. C. Hughes, E. J. Hesson, R. J. Hiscox, F. W. Johnson, J. S. Lapp, C. T. Moyle, H. E. Mann, F. C. Mann, J. A. Milne, F. J. Moffatt, W. R. Morrison, W. J. H. Millar, J. D. Morrison, R. R. McIntyre, W. D. MacLeod, L. E. MacLachlan, R. C. McLaughlin, K. N. McVicar, Hugh McCrostie, A. M. Palmer, W. A. Pommer, H. A. Ross, C. E. Stewart, H. E. Smith, C. M. Trueman, P. H. B. Wood, W. R. Wilkes.

The following have passed in Jurisprudence and Ethics.

C. C. Clermont, W. M. Box, H. G. Brownlee, H. M. Brown, I. M. Benezra, F. W. Beach, J. A. Buttery, L. H. Croft, J. G. Countryman, V. A. Clark, B. J. Charles, H. R. Day, W. Ewart, R. F. Fralick, J. E. Fraser, G. A. Gemeroy, G. A. C. Gunter, J. A. Graham, N. W. Haynes, J. A. Herrington, M. J. Heney, P. C. Hughes, E. J. Hesson, C. T. Moyle, J. A. Milne, W. J. H. Millar, W. R. Morrison, J. D. Morrison, W. D. MacLeod, L. E. MacLachlan, R. C. McLaughlin, R. N. McVicar, Hugh McCrostie. A. M. Palmer. W. A. Pommer. H. A. Ross, C. E. Stewart, H. E. Smith, P. H. B. Wood.

The following have passed in Anaesthetics.

C. C. Clermont, W. M. Box, H. G. Brownlee, H. M. Brown, F. W. Beach, G. A. Buttery, L. H. Croft, J. G. Countryman, V. A. Clark, G. C. Caldwell, B. J. Charles, J. C. Doore, H. R. Day, W. Ewart, R. F. Fralick, J. E. Fraser, C. C. Graham, G. A. Gemeroy, G. A. C. Gunter, J. A. Graham, N. W. Haynes, J. H. Herrington, M. J. Heney, P. C. Hughes, F. W. Johnston, C. T. Moyle, F. G. Mann, J. A. Milne, F. J. Moffatt, W. R. Morrison, W. J. H. Millar, J. D. Morrison, R. R. MacIntyre,

W. D. MacLeod, L. E. MacLachlan, R. C. McLaughlin, G. H. MacKee, Hugh McCrostie, A. M. Palmer, W. A. Pommer, H. A. Ross, C. E. Stewart, H. E. Smith, P. H. B. Wood, W. R. Wilkes.

THE ALBERTA DENTAL ASSOCIATION
EDMONTON, ALTA.

Balance Sheet and Statement of Income and Expenditure for the Year Ending April 30th, 1920.

May 17th, 1920.

The Alberta Dental Association,
Edmonton, Alberta.

Dear Sirs:—

We have written up and audited the Books of Account and Vouchers of The Alberta Dental Association for the year ending April 30th, 1920, and attach hereto Certified Balance Sheet as at that date, and Statement of Income and Expenditures for the year then ending.

We have examined the securities held by the Association which have been lodged for safe keeping at the Canadian Bank of Commerce and find them to be in order.

We have brought into account the Accrued Interest on these securities to April 30th, 1920.

The Records and Vouchers of this Association are in good order and we have pleasure in stating that we have obtained all information necessary for our audit. We are,

Yours truly,

Baldwin, Dow and Bowman,
Chartered Accountants.

Balance Sheet, April 30th, 1920.

ASSETS.

Cash at Canadian Bank of Commerce:		
Savings Account	$3,517.71	
Less Current Account O.D.	9.69	
		$3,508.02
Accrued interest earned on above		37.16
Provincial Government Saving Certificates purchased Sept. 30th, 1919		1,000.00
Accrued interest on same		29.37
Dominion Government War Loan, 1919 (15 years)		500.00

Accrued interest on same		13.75
Furniture and Fixtures: Typewriter	115.00	
Less depreciation	90.00	
		25.00
		$5,113.30

LIABILITIES.

Surplus Account, May 1st, 1919	$3,708.96	
Add Income, 1919-1920	2,574.45	
	$6,283.41	
Deduct Expenditure, 1919-1920	1,170.11	
		$5,113.30

We hereby certify that we have audited the Books of Account and Vouchers of The Alberta Dental Association for the year ending April 30th, 1920; and that the above Balance Sheet is true and correct as shown by the said Books of Account at that date, and, in our opinion, presents a correct view of the affairs of the Association.

Baldwin, Dow & Bowman,
Chartered Accountants.

Edmonton, Alberta, May 17th, 1920.

Statement of Income and Expenditures for the Year Ending April 30th, 1920.

INCOME.

Interest on Savings Bank Account	$ 89.73	
War Certificates	29.37	
Victory Loan	13.75	
	$132.85	
Less Exchange and Bank charges	.40	
		$ 132.45
Registration Fees		1,200.00
Annual Fees		955.00
Special Fees (Interim)		75.00
Arrears		212.00
		$2,574.45

EXPENDITURES.

General Expenses: Postage, etc.	$ 72.15	
Printing and Stationery	139.05	
Legal Expenses	9.56	
Board Expenses	569.35	

Bookkeeping and Auditing	70.00	
Secretary	150.00	
Insurance Premium on Fidelity Bond	10.00	
Educational Committee	150.00	
		$1,170.11
Excess of Income over Expenditures carried to Surplus Account		$1,404.34

SASKATCHEWAN DENTAL ASSOCIATION

The annual convention of the Saskatchewan Dental Society was held in Regina, June 28th and 29th, it being in attendance and other ways as well, the best meeting of the organization since it was formed three years ago.

President G. E. DeWitt presided over the meetings and a number of resolutions relevant to the future work of the Society were presented and keenly debated.

The executive had been successful in securing Dr. Elmer S. Best, of Minneapolis, as the chief essayist for the meeting. Dr. Best was able to uphold his reputation as a teacher and the Saskatchewan Society wish to thus publicly place on record their appreciation of his services. Dr. Best dealt very fully with the large problem of "Mouth Diagnosis," going fully into the system which he has lately introduced into Columbia University.

The following men were also on the program:

Dr. S. Moyer, Rosetown, "Review of the year's dental literature."

Dr. R. H. Layng, Kerrobert, "Education of the laity."

Dr. A. P. Salter, Saskatoon, "Modelling compound impressions."

Dr. A. F. Dyer, Regina, "Some phases of orthodontia."

The next meeting will be held at Moose Jaw with the following officers:

President, Dr. A. L. Johnson, Moose Jaw.
Vice-President, Dr. A. P. Salter, Saskatoon.
Secretary-Treasurer, Dr. J. Silknitter, Moose Jaw.
Education Committee, Drs. C. W. Parker, M. R. Parkin, F. K. Switzer.
Research Committee, Dr. F. R. Graham.
Resolution Committee, Drs. Moyer, Robb and Irwin.

Programme Committee, Drs. Lane, Harwood, Dickson, Layng, Ness.

Audit Committee—Drs. D. Barnes and R. N. Grant.

The convention was closed with a banquet which was held in the dining room of the Provincial Parliament Buildings, and was attended by Premier Martin, representing the Government; Dr. H. H. Mitchell, representing the medical profession, and D. A. MacNiven, representing the profession of law.

The following men registered: Elmer S. Best, Minneapolis; S. M. Miller, Boston; G. E. H. DeWitt, Regina; H. B. Ness, Cabri; L. J. D. Fasken, Regina; W. F. Smith, Regina; C. M. Truman, Craik; C. H. Weicker, Regina; S. J. Burns, Regina; A. L. Johnson, Moose Jaw; J. Silknitter, Moose Jaw; A. W. Lane, Moose Jaw; W. H. Ross, Regina; R. Ross, Regina; F. R. Graham, Estevan; R. Lederman, Regina; V. E. Barnes, Assiniboia; D. Barnes, Regina; D. H. McKechney, Cadillac; R. E. Smale, Regina; A. G. Smith, Regina; T. I. Robb, Regina; Grace Armstrong, Regina; R. H. Grant, Regina; H. Johnson, Moose Jaw; C. C. Rowe, Regina; H. M. Schweitzer, Regina; C. W. Parker, Regina; M. R. Parkin, Regina; A. P. Salter, Saskatoon; E. W. Mounteer, Regina; F. K. Switzer, Saskatoon; R. T. Tureen, Saskatoon; R. H. Layng, Kerrobert; D. J. Ferguson, Saskatoon; J. P. Brown, Oxbow; P. W. Winthrop, Saskatoon; W. Ibberson, Saskatoon; V. Roundeau, Roleau; S. Moyer, Rosetown; Major G. L. Cameron, Regina; D. S. Howden, Moose Jaw; F. S. Van Woert, Regina; Anna Munro, Davidson; F. C. Harwood, Moose Jaw; D. D. McDonald, Milestone; H. E. Agar, Watrous; J. A. Mooney, Regina; J. A. McGregor, Regina; Hugh Leitch, Regina; L. D. Steele, Regina; S. Moore, Balcarres; J. A. Stewart, Maple Creek.

THE ALBERTA DENTAL ASSOCIATION

At the annual meeting of the Alberta Dental Association, held in Banff, July 3rd, the following were elected members of the Board of Directors: Drs. L. H. McIntyre, Edmonton; M. L. Moore, Medicine Hat; A. B. Mason, Edmonton.

Officers for the ensuing year are Pres., M. J. Gibson, Lethbridge; Vice-Pres., A. B. Mason, Edmonton; Secty.-Treas., J. W. Clay, Herald Blk., Calgary.

THE SCHOOL OF DENTISTRY OF ST. LOUIS NEW BUILDING

St. Louis, Mo., May.—The School of Dentistry of St. Louis University will be provided with a new building and another clinic out of the $3,000,000 Endowment Fund sought by the alumni and friends of the University in commemoration of the institution's first one hundred years of service in the field of higher learning. More professors also will be added to the faculty of the Dental School, according to an announcement by President William F. Robinson, S.J., of the University, and professors now on the teaching force will be given an adequate increase in salary, he said.

The income on one-half of the endowment fund will be used for increasing the salaries of professors in four of the colleges of the University, $60,000 of the money to be devoted to this purpose in the Schools of Medicine and Dentistry. A total of $550,000 is to be used in providing for new clinics and buildings for the schools of Medicine and Dentistry.

Julius S. Walsh, a prominent banker of St. Louis, is chairman of the Centennial Endowment Fund Committee, and James W. Byrnes, head of a large local industry, is chairman of the executive committee in charge of the movement. George W. Wilson is treasurer of the fund.

Committees of alumni are being established in every state of the Union.

St. Louis University's School of Dentistry was opened in 1908 and since has been the only Class A School of Dentistry in this section of the country.

TORONTO DENTAL SOCIETY

Dr. Gysi, of Zurich, Switzerland, who is lecturing throughout the United States, has been secured by the Toronto Dental Society to be with us on Friday, October 1st, 1920, in College Building. His subject will be "Some Essentials to Masticating Efficiency in Artificial Dentures." As this will be his only appearance in Canada before sailing for Europe, a crowded meeting is expected. Out of town dentists cordially invited. Remember the date, October 1st, 1920, College Building, 8 p.m.

W. H. Coon, President,
H. H. Armstrong, Secretary.

Editorial

EDITOR:
A. E. Webster, M.D., D.D.S., L.D.S., Toronto, Canada.
ASSOCIATE EDITORS:
ONTARIO—M. F. Cross, L.D.S., D.D.S., Ottawa. Carl E. Klotz, L.D.S., St. Catharines.
QUEBEC—Eudore Debeau, L.D.S., D.D.S., 396 St. Denis Street, Montreal; Stanley Burns, D.D.S., L.D.S., 750 St. Catherine Street, Montreal; A. W. Thornton, D.D.S., L.D.S., McGill University, Montreal.
ALBERTA—H. F. Whitaker, D.D.S., L.D.S., Edmonton.
NEW BRUNSWICK—Jas. M. Magee, L.D.S., D.D.S., St. John.
NOVA SCOTIA—Frank Woodbury, L.D.S., D.D.S., Halifax.
SASKATCHEWAN—W. D. Cowan, L.D.S., Regina.
PRINCE EDWARD ISLAND—J. S. Bagnall, D.D.S., L.D.S., Charlottetown.
MANITOBA—M. H. Garvin, D.D.S., L.D.S., Winnipeg.
BRITISH COLUMBIA—H. T. Minogue, D.D.S., L.D.S., Vancouver..

VOL. XXXII. TORONTO, AUGUST 15, 1920. No. 8.

THE CANADIAN MEETING

The Canadian Dental Association held its tenth biennial meeting in Ottawa, August 17, 18, 19, 20, 1920. It becomes more and more apparent that the work of this organization must be spread out among a number of members. It is now impossible for any member to keep track of all that is going on. The Dominion Dental Council held its meetings during the three days previous to the general meeting. The executive council held a meeting August 16th. The Canadian Dental Faculties Association held a long session on the evening of August 17. There were sessions of the C.A.D.C. committee, besides all the other committees of the Association.

Dentistry in Canada is now better organized than it has ever been before. It must be somebody's duty to keep the machinery running, which can only be done by properly paid officers. No dentist can afford the time to act as secretary, or attend executive meetings, travelling from one part of the country to another at his own expense. If the profession receives benefit from its organization, then it should be ready to pay for the cost.

The exhibits were splendid. The manufacturers were well represented and deserve praise for the character of demonstrations presented. It is unfortunate from many points of view that there was not a larger attendance, although there were sixty more present than at a former meeting in Ottawa. Generally speaking, the best results are attained when the meetings are held in the larger dental centres.

The profession of Ottawa is to be congratulated for the splendid arrangements and for providing accommodation at a time when there is great difficulty in getting sleeping rooms

As has often been said before, the Canadian meeting should be a clearing-house for all that has been developed in dentistry during the preceding two years. On this occasion there were few Canadian essayists on the program, Drs. Thomson, Seccombe and Thornton presenting subjects of Canadian development. All through the program, essayists presented their subjects to a sparsely filled room. This was especially true in the case of the subject of the relation of diet to dental disease. As yet the dental profession has not realized the vital relation existing between decay of the teeth and diet. Dr. Seccombe laid down the fundamentals of diet as gathered from the recognized authorities of the past decade. This was followed by Dr. F. C. Husband, who made a practical application of the principles to patients. Dentists must and will become intensely interested in this subject within the next few years.

While some of the members held that the program was altogether too much on the side of theory, they will be glad and gratified when they go home and begin to think over what was presented. Dr. Grieve made an attempt to classify diseased conditions about root ends which will give the profession a working basis. He threw out a ray of hope in the root canal question that was pleasing. Dr. T. Sydney Smith gave a charming and instructive address on the modern treatment of diseases of the gums. Both Grieve and Smith have arrived at the conclusion that the cementum is a living and vital tissure after the pulp is removed, and will remain so, if it is not destroyed by infections, drugs or traumatism. A pulp removed under favorable circumstances will leave the peridontal membrane normal. This last statement is doubtful, because no tooth which has lost its pulp will bear as much stress in jaw closure as before, which would indicate that something abnormal has occurred in the membrane. Grieve held that there is a barrier to the passage fluids between the cementum and denture in the gingival region, while in the apical region there is free transit. Smith was strongly of the view that if the peridontal membrane is at any point detached from the cementum, it will re-attach if the tissues are properly treated. An exceedingly interesting feature of Smith's address was the emphasis placed upon instrumentation for the treatment of periodontia and the absolute omission of the use of drugs. His view is that drugs destroy living tissue and prevent nature from pouring out her body juices as a protection. In the final analyses drugs do not cure; at best all they ever did was to assist nature to get rid of infection and its products.

Dr. Davis presented a paper of unusual value because it opens the way to a saner method of root treatment. In another part of this issue appears a fuller statement of his findings and the practice based upon them. We present it at this time because it may be many months before the paper is printed in full.

Again the Hamilton Clinic Club did itself credit in presenting the Hall method of making prosthetic restorations. Many members said they had been fully repaid for their time at the convention by seeing this clinic. On the whole, there were not enough clinics for the importance of the convention. One clinic on removing pulps and immediate root filling was of special interest because secrete preparations were used without being challenged.

The meeting at Ottawa 1920 will go down in history as of great interest and importance because of the value of the communications and the establishment of the profession on a sound constitutional basis.

THE CANADIAN ARMY DENTAL CORPS

The twistings and turnings of the Government, the Military Council, the A.G., the D.G.M.S., the D.G.D.S. are difficult to follow and more difficult to understand. Dentistry in the Canadian militia, and in the Canadian army has had a rocky road to tread. Dentists were first taken into the Canadian militia about fifteen years ago as a part of the medical corps. It was soon found that they occupied a place of menial importance. They chafed under the officers of the medical service. On several occasions representations were made to the A.G. and Minister of Militia and Defence with no result. When the war came on, over 12,000 soldiers, otherwise fit, were rejected because of mouth conditions. The medical services were powerless to do anything. Their dental organization completely fell down. Civilian dentists organized and proceeded to care for those soldiers rejected. In the spring of 1915, the Hon. Sir Sam Hughes was seen by a committee of civilian dentists, after which a dental corps independent of the medical services was organized and immediately began a rapid development of an organization which has done credit to the dental profession, the Canadian army and the Canadian nation.

On June 30th, 1920, the C.A.D.C. was demobilized. It was promised by the then Minister of Militia that there would be a permanent dental corps established. In fact, many thought it had been done. At present there is no dental corps. There are a few of the C.E.F. remaining to clear up the business of the organization.

At the meeting at Ottawa, a letter was shown to the members of the profession which had been sent out to the medical officers in which they were directed to examine soldiers' mouths and make charts of them, send the soldiers to civil dentists to have the required operations made, re-examine the work, and if satisfactory direct the payment of the charges and discharge the patient.

It was difficult to find out who was the author of these orders. The director of dental services said he knew nothing of its authorship, and so said the director of medical services. One thing was clear, they both signed it. When things come to such a pass that the medical profession is directed to decide what dental services are required and how they shall be executed and their value, then dentistry may as well quit.

A committee was appointed to interview the director of dental services and the Minister on this matter and on the matter of a permanent corps. The Minister received the committee graciously and discussed many points with great interest. He finally said that the establishment of a permanent dental corps independent of all other corps seemed reasonable.

When the committee got through with the Minister, the Director-General of Medical Services invited the committee to visit his office for an informal talk. During this talk it developed, and was made clear, that he was wholly in accord with the dentists' views on corps organization.

It is difficult to understand why the Minister should have invited the Director-General of Medical Services to be present when the dentists were to interview him, and still more difficult to understand why the Director-General of Dental Services was *not* invited. As laymen, we confess incapability of understanding such an action.

A SANE ROOT CANAL TREATMENT

Dr. Clyde Davis presented to the Canadian Dental Association numerous specimens of roots of teeth which had dead pulps and the root canal completely closed with calcific matter. He has found that such closure does not occur where the pulp or apical tissues have been devitalized or destroyed by infection, poisonous drugs, or traumatism, but on the contrary, if the pulp is surgically removed to within a short distance of the apex by local or general anaesthesia and the pulp canal carefully wiped out with mild drugs such as alcohol, cloves, camphophenique, and the root filled short of the apex, the cemental tissues at the apex will completely close the canal. These discoveries or demonstrations completely verify the work of Garvin, who showed greater success in root filling short of the apex than those beyond. Dr. Davis recommends a root canal lubricant made up of chloroform, one and a half drachms; resin, forty grains; tire dough as is used for plugging holes in tire casings, eight grains; aristol, four grains; eucalyptus, half a drachm.

This lubricant is worked down the canal and a gutta percha cone pushed into it and the whole covered with oxychloride of zinc.

CHANGES IN THE BY-LAW

At the May meeting of the Board of Directors of the Royal College of Dental Surgeons of Ontario, changes were made in the by-laws which permit the Board to grant the title of M.D.S. to any dental surgeon of Ontario, in consideration of services rendered to the profession or public. This title has only been given after examination in the past. By-law 27, which related to elections to the Board, was modified so that members of the faculty of the School of Dentistry will be permitted to vote in the electoral district in which they reside.

In section 10 which reads, "If sent by mail must be registered mail" changed to "or if sent by mail."

FIXED BRIDGEWORK

The following questionaire has been sent out by Dr. Ottolengui on the subject of fixed bridgework. A former set of questions on the same subject sent to teachers of bridgework elected only four replies. These questions are being sent to teachers of pathology:

1. Is the untrammeled physiological movement of teeth essential to the proper nutrition of the environing tissues?
2. Will a fixed bridge, attached to perfectly healthy teeth, so restrict physiologic tooth movement as to interfere with this nutrition and induce a tendency towards pathologic disturbance.
3. Would an attachment to pulpless teeth be more likely to induce disturbance than an attachment made to living teeth?
4. Where pathological conditions are already present so that the teeth to be used as abutments are more or less loosened in their sockets by disease, will a permanent fixed bridge have a tendency to cause a repair and restoration to health?
5. If such a bridge, acting in the capacity of a splint should restore the health of the parts should it not then be removed?

Now, my dear doctor, I hope that you will consent to an expression of your opinion on this subject.

I would especially call your attention to the editorial in the "Dental Items of Interest" for January, 1920, and the frontispiece in the same number.

SCARCITY OF SUGAR IMPROVES THE TEETH

Evidence that the scarcity of sugar in England has improved the teeth is given in the London "Times" report of a three days' conference as follows:

"A three-days' conference on the prevention of disease of the teeth was formally opened by Lady Rhondda. There was agreement among the experts on the origin of decayed teeth, though all were not as emphatic as Dr. J. Sim Wallace, late Lecturer on Dental Surgery and Pathology at the London Hospital, in declaring that the one and only cause was the action on the exterior enamel of the tooth of acid formed by bacteria from carbohydrate foodstuffs. Dr. James Wheatley, for one, was unwilling to rule out the possibility of pre-disposing causes.

"Both Sir William Milligan and Dr. Sim Wallace called attention to the fact that Jewish children have better teeth than

Gentile children. This was attributed to differences in diet, and principally to the use of oil by the Jew instead of sugar. Dr. Wheatley, the County and School Medical Officer for Shropshire, produced a record of investigations in the elementary schools of that county showing that the restriction of the sugar supply during the war, the altered character of the bread, and the reduced consumption of milk had been accompanied by a remarkable diminution of dental caries.

"The speakers vied with each other to find expressions strong enough to describe the state of the nation's teeth. 'Compared with my experience in America and Canada,' said Colonel Adam, Vice-Chancellor of Liverpool University, 'the people in England reveal to their medical attendant a perfectly ghastly series of decayed fangs. I confess that I do not like the variegated golden smile which too often confronts one in America, but it provides abundant evidence of the care that has been taken.' "

Editorial Notes

Dr. Rupert E. Hall is giving a clinic at London, Ontario.

⁂

The dental officers in the C.A.D.C. District No. 7 were demobilized at the end of July.

⁂

An X-ray machine will be installed in connection with the London, Ontario, Public School dental clinics.

⁂

We again publish the examination papers set by the Dominion Dental Council so that the profession may see the standards maintained.

⁂

The American Text Book of Operative Dentistry, formerly edited by Edward P. Kirk, is coming out in a new edition edited by Marcus L. Ward.

⁂

In the past, candidates who are graduates of a foreign Dental College, who wished to register in Ontario, were required to pay a fee of $250. Now the fee will be $200.

⁂

The Victoria, B.C., Dental Society has been re-organized with Dr. William Russel as Secretary. The Society will meet each month for Dinner and Discussion of some Dental subject.

At the annual meeting of the New Brunswick Dental Association the following officers were elected: Dr. O. B. Price, Moncton, president; Dr. W. R. Wilkes, St. John, vice-president; Dr. F. A. Godsoe, St. John, secretary-treasurer. Members of council, Dr. W. P. Broderick, Dr. W. P. Bonnell, Dr. C. F. Gorham.

⁂

The Dominion Dental Council has decided to hold two regular examinations in each year, June and September. This year the September examination will be held in October because there is not time to make the necessary arrangements by the earlier date.

⁂

The press of Canada has grasped at a report from the Academy of Dental Science in Chicago to the effect that gold crowns are objectionable, and published it more widely than if it had come from the National Dental Association. Dentistry as a profession does not know the Academy of Dental Science. Such things make people who know suspicious of all press news.

⁂

The officers elected to serve the Canadian Dental Association during the next two years are: President, H. F. Whittaker; 1st vice-president, S. W. Bradley; 2nd vice-president, Emory Jones; secretary-treasurer, Edmond Grant, 239 College street, Toronto. Under the new constitution, the general business of the Association is left in the hands of the executive council, of which the officers are members.

⁂

In some recent newspaper clippings from Ontario appears some of the most ridiculous, untruthful and silly statements about dentistry that have appeared for years. It is quite evident that these articles have come from some source with the belief that they are striking and attractive. References are made to the oral hygiene movement in Ontario, with the intention of making it look ridiculous or supporting it one cannot tell. The Kingston "Whig" of June 14, 1920, contains one of these silly articles. Dentists should take pains to have such fool things corrected. The truth is always more interesting than untruth.

Review

Principles and Practice of Operative Dentistry. By John Sayre Marshall, M.D., ScD. Fifth edition. Publishers, J. B. Lippincott Company, Philadelphia and London.

The demand for a fifth edition of a work on operative dentistry which is not solely taken up with technical procedures is evidence of its place in dental literature. The majority of works on this subject consist in a recitation of mechanical procedures or descriptions in detail of how to make certain operations. This one discusses the subject in a general way giving prominence to colateral sciences and the opinions of other writers. It is not a personal view of the subject, but the author's composite conclusion after presenting all sides of the question. Or as stated in the preface a conservative text book on operative dentistry.

The author intends this to be a complete expose of the subject from anatomy, histology, bacteriology, chemistry, pathology to prognosis. The objection to this kind of book is that it undertakes too much. If a student or general practitioner wished to look up any one of the above subjects, he would consult a book accepted as an authority. If the subjects treated in the first one hundred and twenty pages were omitted, students would find the book just as useful and less cumbersome and expensive. The section on silicates might have been more extensive, as well as that on gold inlays. The section on anesthetics and anaesthesia are splendid from the viewpoint of the operative dentist.

FOR THE INFORMATION OF WHOLESALE AND RETAIL DRUGGISTS AND OTHERS CONCERNED

Under the amendment to the Opium and Narcotic Drug Act, which was passed at the recent session of Parliament, it is provided that the same shall come into force on a date to be fixed by proclamation of the Governor-in-Council.

It is the intention of the Department to have this Act proclaimed and come into force on or about September 1st next.

Under the new Act, all wholesale druggists, manufacturers or dealers are required to obtain a license to deal in these drugs, for which an annual fee of twenty-five ($25) dollars is charged. All retail druggists who manufacture narcotic drugs, or preparations containing the same, are required to obtain a license, for which an annual fee of five ($5) dollars is charged. All druggists, other than those who manufacture, and every physician, veterinary surgeon and dentist is required to make a declaration that they are engaged in the sale or distribution of these drugs. Forms will be supplied by the Department on application to be filled in and returned as required under the Act.

The Act also requires all druggists, whether wholesale or retail, and all manufacturers to keep a record of their receipts, together with a record of the quantity manufactured, and a record of their sales. These records are required to be kept in a special book kept for this purpose, and after a prescribed form.

Another important change under the new Act is the limiting of the number of ports in Canada at which these drugs may be imported or exported, and the provisions whereby opium and other drugs intended for export must be packed and marked in such a manner as to denote the contents of the packages.

Provision is made under the Act for the sale of preparations intended for internal use which do not contain more than two grains of opium, or more than one-fourth of a grain of morphine, or more than one-eighth of a grain of heroin, or more than one grain of godeine to the fluid ounce. Provided, however, that such preparations must be medicated to sufficiently preclude the possibility of their being purchased simply to obtain the narcotic effect, and further that such preparations must have printed on the label or wrapper in a conspicuous place the following warning: "It is unlawful to administer this preparation to a child under two years of age as it contains opium and is dangerous to its life."

The maximum penalty for infraction of the Act has been increased from five hundred ($500) dollars to one thousand ($1,000) dollars, and a minimum penalty of two hundred ($200) dollars is provided.

It is the intention of the Department at a later date to furnish all druggists with a copy of the regulations, together with a copy of the Opium and Narcotic Drug Act, with amendments to date.

Department of Health,
Ottawa, July 28th, 1920.

Dominion
Dental Journal

Vol. XXXII. TORONTO, SEPTEMBER 15. 1920. No. 9.

Original Communications

EFFICIENCY FOR DENTAL ASSITANTS

Iva Mae Hover, Dental Assistant, Chicago, Ill.

My friends, we are coming into our own. Dentists attend lectures and clinics to improve their qualifications; it is necessary that their assistants meet for a similar purpose. Personal contact and interchange of ideas are two of the greatest essentials in self-development. How rapid would be the individual's advancement if each depended solely upon her own unaided initiative?

It is the purpose of your essayist to call attention to the real status of the dental assistant and then to suggest how this may be developed and maintained at the highest point of efficiency.

First of all, this status is not that of "helper" at so much per week, nor that of simply being in the office to await orders, leaving all responsibility with the doctor, nor on the other hand is the status that of manager. The dental assistant is an essential part of a producing institution, and in many respects the role assumed by her is more essential than that required by the majority of business girls. To illustrate, you probably have in mind a bookkeeper who does not know a single customer by sight nor half of her fellow workers. She is a cog in the wheel of commerce, easy to replace, and when she drops out the manager will not even know that she has gone. The dental assistant, on the other hand, is or should be a vital factor in the conduct of a definite institution.

I wish to emphasize the fact that efficient work may be both pleasurable and profitable. As a matter of ordinary sense, it is an axiomatic truth that it is more profitable to do good work than bad and incomparably more pleasant.

Do you remember learning to knit during the war? Clumsy? Well, I had seven fingers on each hand, each one a total stranger to all the rest. Now, knitting is as easy as eating ice cream. Your dental work will follow along the same lines, all you need is intelligent application.

PERSONAL APPEARANCE.

Let us take up appearances. What are the first impressions that a visitor gets upon entering the reception room? The patient sees the office, and sees you, before a word is spoken, and one glance conveys, especially to a woman, a world of impressions. Imagine yourself as the patient and be sure that everything is as you, yourself, would like to see it. Be a good housekeeper. Nobody likes uncleanliness or untidiness in others and your attention here will contribute largely to the patient's first impression of the dentist, whose growing patronage will multiply your success.

Personally, be as neat and trim as the law allows, and the law is very liberal in this regard. White gown, all buttons in place, high neck, long sleeves, white cap, white canvas shoes with low heels (for comfort as well as appearance), yes "spick and span," as the saying is. Equally important are neat hair dressing, personal cleanliness, and hands in perfect condition. Let me repeat, "hands in perfect condition," for as such they will be a source of satisfaction not only to yourself but also to the patient, whose face you must often touch. Further than this, endeavor to help the dentist to regard his own personal appearance as a professional asset and to make it a point of personal pride.

Keep a jar of hand brushes, and use each only once before sterilizing. This is the only sanitary way, besides it will impress the patients with respect for your methods.

Both the assistant and the dentist should possess mouths that exemplify perfect oral condition. A dentist or assistant with bad, decayed teeth or a bad breath is like a lawyer in jail: it indicates incapacity in one's chosen profession. The necessary drugs and chemicals will furnish all the disagreeable (?) odors that may be required.

Another thing to be avoided like the plague, is strong perfume; some that is sold might be called violent. There are no objections to its judicious use, but keep it so subdued that there is a possible doubt in the smeller's mind whether you have any about you or not. If you perspire too freely, there are numerous preparations that will remove the odor.

No one item of a girl's appearance is of more importance than her hair; but remember it must be kept secondary to the face; that is, it must be simply and becomingly dressed. Extreme styles or very elaborate coiffeurs are distinctly out of place in a dentist's office. You may take it for granted you are a good looking girl—dentists are notoriously competent judges of feminine beauty—so arrange your hair merely to set off your face—to do the reverse is a poor compliment to your looks.

Finally, you are a part of a scientific, surgical institution. A dentist's office is not a charity ball, a fashion show, or a peacock alley. You are an assistant to a man of science. Dress the part; look the part; and act the part.

VENTILATION.

Too much importance cannot be attached to the subject of ventilation. It is impossible to keep a dentist's office too well ventilated. Ventilate, and ventilate again. You are familiar with the odor of an office in the morning; you don't like it; neither do the patients. Begin the day by opening all the windows and giving the office a thorough airing; after this, close them but only partly, thus insuring plenty of fresh air. All windows should be provided with ventilators, or some form of shield to prevent drafts. Keep the temperature at about 72 degrees in the winter, and in the summer keep the place cooled with electric fans, taking care not to have them blow on the patient. Air the office the second time during the day, at the doctor's lunch hour. Fresh air is the one good thing we can get free in these H. C. L. times—let us get enough of it.

CARE AND PREPARATION OF THE OPERATING ROOM.

Dust everything thoroughly, put a few drops of oil on the engine about once a week; remove and wipe out the straight handpiece, because grit and oil will soon ruin the bearings of an otherwise true running handpiece. Give the contra-angle the best of care; clean and oil it and place it in an airtight jar containing Formalin and Borax, or better still, after each operation, sterilize it in a Pentz sterilizer.

Clean the cuspidor and polish the nickel. A good way to keep this in perfect condition is to dry the nickel when the water i sturned off, then no polish is necessary. Also, clean all other nickel in the room, using a metal polish at least twice a week.

After the patient is seated, take a sterilized glass from the drinking glass cabinet and place it on the bracket table. This will impress him or her with the fact that no one else has used it: also, remove a saliva ejector from the glass jar and attach to the saliva tube; this also in sight of the patient. Place a clean napkin on the head rest after each patient; place a napkin with holder attached on the back of the chair; likewise, put a fresh napkin on the bracket with contra-angle, dish of cotton pellets, mirror, explorer, pliers and dental floss in readiness for the doctor. While the dentist is working, the assistant need only to bring a tray containing all the instruments and materials needed for that particular operation. This, of course, necessitates the duplication of some instruments, but it is economy, and will speed up production.

Accomplishing these duties quickly saves many minutes during the day; this is very valuable to the doctor whose time is limited.

A cap adjusted to the patient's head, besides keeping the hair dressing in good shape and guarding the head from contact with the head rest, has a good psychological effect on discerning patients. In the interval between patients, the operating room must be put in order as rapidly as possible. Place used instruments in a tray, and fresh ones in readiness; remove the drinking glass and saliva ejector; remove bits of cotton, etc., from the table and floor and place the clean linen.

In the arrangement of linen and supplies, always place the instrument trays in the same position, so you need not pull out every drawer to find what you want. "Order is Heaven's first law"—likewise it should be the dentist's. Arrange trays in the order of their use; first, the cutting instruments for cavity preparation, then follow with trays holding wax pluggers, trimmers and files for the finishing. Place cotton rolls and the rubber dam in a sterile jar; temporary stopping and cement should be placed on the same side of the cabinet.

Learn to sharpen the instruments; use the air syringe; know the different surfaces of the teeth, cavity preparations, tooth form and the different operations in dentistry.

Be able to order supplies intelligently, and know best how to buy in large or small quantities. Take note of the supplies in the cabinet at the end of each day's work and see what may be lacking. A good way to provide necessary wants, is to put a pad on the desk and make a notation of each article you will need as you work during the day; then you will never be short. In other words, relieve the doctor of all the worry connected with this very important part of the office routine.

RECEPTION OF PATIENTS.

Always be glad to see patients come in, and let them see that you are glad. Now let us analyze this. You are glad, sincerely glad, or you are in the wrong business. Why? Every patient means more money for the dentist, and a share of it is yours. Every patient means more prestige for the dentist, and a share of it is yours. I know an assistant, in a large city, too, who frequently gets flowers and candy from the doctor's patients (and not men patients, either) and numerous little Christmas gifts. She makes the patients like her just by liking them, and seeing to their comfort while in the office.

When a patient enters, as I said before, let her know you are glad to see her (no gushing, however), take her to the dressing room, help her off with wraps and hat, after which seat her in the chair, adjust it, place the napkin, and be sure by asking, that she is comfortable, then call the doctor. Keep the patient's comfort constantly in mind. Adjust the shades, the electric fan, anything that makes it easier for the patient. A session with a dentist is not the most pleasant thing in the world at best.

When the doctor is through turn the chair to one side, lower it and take off the napkin. If advisable, help the patient to arise, and accompany her to the dressing room, and to the door. All this without overdoing it, and the patient is yours as well as the dentist's, and it's a mighty good thing when a prosperous patient shows an interest in you.

No matter what happens in the operating room never show any sign of fear or excitement; it can do no good, and usually does harm, as it will make the patient uneasy. While it is seldom necessary that any discussion arise with the doctor, if it does, be very careful about answering; if you want time to think, simply say, "I beg your pardon, doctor, I didn't quite understand that," or something of the kind to gain a little time. Never show any resentment before a patient—probably you were wrong, anyway.

When to talk, and when to keep still, are beyond the ken of mortal mind. In general, it's wise to let the patient talk if she chooses, or you may talk if she prefers to listen. In either instance you may have a great influence in bringing her into agreement with the dentist's suggestions.

The more you help to increase the dentist's income, the larger your share will be. He can afford to pay you all that you are worth.

PROMPTNESS.

Do you realize that one of the most important elements, if not the most important element, in a dentist's office is time?

Let me repeat, "time." There it is, and it can't be multiplied or replaced. When the work stops the income stops; if an operation is delayed, it means a loss of money. When the dentist calculates his services at so much an hour, if you delay him by negligence he loses time and money. Now you cannot disassociate yourself from the doctor; those little things that are good for him are good for you—the reverse is just as true.

Learn to act quickly, but not hurriedly. When helping to perform an operation, have the proper instrument ready the instant the doctor needs it. The very nature of the work requires this readiness in order to get the best results. You will soon find that you will work together with the precision of the parts of a machine.

CONCENTRATION.

You must apply concentration all day long from the moment you start work in the morning until you leave at night. Put your whole soul into the work at the office and you will have no time for thoughts outside. Each operation should be just as interesting to you as to the doctor. You should follow his work so closely that you will know each instrument and its use. Never let your eyes leave the work a single moment. If you do your mind wanders, and when the doctor needs your assistance most, he must wait until you find what is needed. Do not leave the chair while he is working; even though you think he may not need you; it is very embarrassing for him to ask for your assistance, when it is your duty to be ready to give it to him. Every minute of the day belongs to him, and he should be entitled to it without asking for it.

Concentration enables you to anticipate the doctor's needs and by anticipating his needs all the time, your hands become an extra pair of hands for him. If you concentrate on your work, you will know just what work is to be done for each patient. For example, if at the patient's previous appointment impressions were taken for bridge abutments, you should be so familiar with the doctor's method of operating, that at the patient's next appearance everything should be ready for the next step in the proposed bridge work. The instruments required should be at the doctor's command without looking for them. If the bridge is not finished, temporary filling material should be ready to be inserted. Be anxious to learn to do as much of the work as possible and much of what you learn is in direct proportion to the effort expended and will bear its just reward in dollars and cents. Learn to pour the plaster casts; help with all kinds of laboratory work; invest and cast inlays; this will appeal to girls for it is particular work and its performance requires care. Learn to place the rubber dam; also to pass a ligature, which should be done with the greatest care. If you know how to do these things it will help you very much to assist some one else who is doing them. If you have no other way to learn, practice on the doctor or some friend who is willing to help you, until you have acquired sufficient self-confidence to work on the patients. It is a very good plan to accustom yourself to working in the mouth, for it all looks very easy until you yourself try it. If it seems strange and difficult, remember that you can rapidly accustom yourself to this phase of your work and you will then render invaluable aid to the doctor.

TELEPHONE SERVICE.

Properly used, the telephone is a benefaction, improperly used it becomes almost a curse. Put your mind to work and analyze the possibilities, advantages and disadvantages; how to call, how to answer, how to get the most out of it, and save the most—both time and temper, yours and others!

There is a story of a gruff male individual calling up a certain number, and asking "Is this 438X?" "Yes," sweetly replies the fair young thing. "Is Mr. Smith in?" "Yes, do you wish to speak to him?" "No, I want to kiss him."

When answering the phone remember that you don't have to look pretty, but just sound pretty.

No matter what the mood of the person who is calling, get him feeling pleasant before you hang up. This requires a little tact and diplomacy. Make yourself feel as if you were working father for a new hat; I don't need to advise you girls about getting people into a good humor. You are going to get some disagreeable calls, but handle them all with tact, and as quickly as possible.

In answering the telephone, it is well to say "Dr. Johnson's office." Thus saving an inquiry at once. If the party asks for the doctor, explain that he is busy with an operation, but you can probably take care of the matter. If it is impossible for you to handle the situation, say that you will take the message, and at the same time learn the caller's name before going to the doctor.

The phone is valuable in filling broken appointments, or blank spaces in the day's schedule. There are, in all practices, busy patients who would be glad to run in for an hour, and who could be in the office within ten minutes.

To review the call list every two or three days will enable you to suggest the names of some of these patients when the occasion offers.

CHAIR ASSISTANCE.

In assisting at the chair the assistant proves extremely valuable, in fact, without her the doctor suffers a severe handicap and a consequent detriment to his work. As the doctor works, the assistant dries the cavity with the hot air syringe and keeps all chips blown away. By skilfully dropping water upon the tooth she keeps all stones moist, when, without such precaution, the operation may become painful and the patient uncomfortable. A pair of pliers, cotton pellets and rolls near at hand enable her to wipe the cavity and insert the cotton rolls before the placing of a temporary stopping and to hold them in place, thus keeping the surface dry while the doctor is inserting the stopping. The assistant then sprays the mouth and dismisses the patient.

If a rubber dam is used during an operation, a dental napkin should be folded and placed next the face as it absorbs the moisture and adds to the patient's comfort.

SURGICAL ASSISTANCE.

In assisting with surgical work the assistant must act rapidly and accurately, and for this type of work patients must be specially prepared. By close scrutiny, the assistant can judge a patient's condition by noting color and general demeanor. It is well to take the temperature and pulse, for with this knowledge, the doctor can more easily determine the proper course to pursue; this knowledge is especially valuable in post-operative treatment. Have ready all instruments and cover with a sterile towel, as they are not pleasing to the eye or memory. Make the patient comfortable; loosen the collar; spray the mouth; adjust the rubber apron, covering it with a sterile towel, and tie a sterile towel about the hair. Wipe the face with cotton saturated with alcohol, or any good antiseptic solution, to render it sterile. Be very careful, however, not to hold this under the nose of the patient and cause strangulation from the fumes.

With hands protected by rubber gloves and with a good supply of swabs at hand, the assistant is now ready for her work. She can keep the surfaces free from blood by using a water syringe, filled with warm sterile water. By holding the lips and cheek away, the assistant can make a clear field of operation for the doctor, and can also steady the head. At the close of the operation she has needle and suture ready to pass to the doctor, and as he sutures, she holds one end of the suture with the pliers, ready to cut it with scissors held in the other hand.

By a skillful use of the sputum pan much time is saved with little discomfort. Some patients are liable to collapse, either during or after an operation; for such emergencies the assistant must have, within easy reach, fresh aromatic spirits of ammonia. To apply the latter, raise the patient, administer the usual dose (20 or 30 drops in a half glass of water), then lower the back of the chair and hold the ammonia under the nose, closing one nostril, thereby forcing the fumes into the lungs at once.

When the doctor has finished the operation he leaves the patient in the assistant's hands. She sprays the mouth, removes all traces of blood from the face, and gives the directions for home treatment, namely; a good saline laxative and the intermittent use of hot salt water as a mouth wash.

The application of an ice bag often affords relief, especially where the area is not inflamed. When inflammation is present, pus also is present, and heat often gives relief. In cases of severe pain 10 grains aspirin tablets every three or four hours, or 5 grains every three hours is, in many instances, effective.

BLOCK ANAESTHESIA PREPARATION.

Because nerve blocking has proved so satisfactory in dental operations the assistant has another field in which to become proficient, and here she can make herself of inestimable value to the doctor. In addition to the usual preparation of the patient for any operation, the assistant now becomes responsible for the preparation of both instruments and solution.

The following technic I am giving you is advised by Dr. A. E. Smith:

Be certain that all of the instruments are sterile. Keep them in duplicate sets in sterilizing jars filled with a germicidal solution. This method always insures sterile instruments when cases closely follow each other. Good care of the instruments adds to their efficiency. When through using the syringe, rinse it with hot water from the faucet and return it to the antiseptic solution in the sterilizing jar, draw out the plunger and fill with solution. The syringe is now submerged by the rack in the germicidal solution and should remain in the jar for several hours before using again. It is better to have extra syringes which are ready at all times.

The injecting solution should be prepared as follows:

Freshly prepared distilled water should be used at all times for the vehicle. The assistant can easily prepare, each morning, a few ounces of distilled water with a still which should be a part of local anaesthetic armamentarium, or of the office equipment. The water should be kept in a small sized chemical flask which should be closed with a plug of cotton. Care should be taken not to allow the distilled water to become contaminated and it is advised to use distilled water which has been stilled the same day it is to be used.

The assistant should be told by the dentist how much solution he will need for the operation and prepare it in a scientific manner as follows:

The 10 mils dissolving cup is now thoroughly cleansed by washing same in hot sterile water, after which it is partially filled with the distilled water and boiled. The water is then discarded.

If the dentist requires 2 mils (2 c c's) of the injecting solution, place 4 mils of distilled water in the dissolver and boil over the flame for at least four minutes for the purpose of thorough sterilization.

The object in placing 4 mils of water in the dissolver is to allow for evaporation; after boiling for four minutes, pour off the excess water and return the amount which is to be injected, which in this particular case is 2 mils. Now add 2 Procain-Suprarenin-Ringer tablets, that is one tablet for each mil (or c c) of water, which gives the proper amount of the anaesthetic and suprarenin and a fresh Ringer solution.

After the tablets are added allow them to dissolve and return to the flame until it is raised to boiling point only. Cool to body temperature. The tablets should never be touched with the fingers or anything which is not sterile but should be placed upon sterile gauze from tube end and then placed in the dissolver with sterile pliers.

The syringe and proper needle which is to be used for the injection is now removed from the germicidal solution in the jar and prepared as follows:

Take a clean test tube and fill two-thirds full with distilled water, boil for three minutes over the flame and then cool. Mount the needle and syringe and submerge both needle and syringe in the distilled water in the test tube; retract the plunger and fill the syringe. Discharge the same outside the test tube. Repeat this procedure at least three times, after which remove the plunger and pour the remaining distilled water into the syringe and then discharge the contents.

This procedure removes all traces of the germicidal solution from the needle and syringe which should, at all times, be carefully done before filling the syringe with the anaesthetic solution.

The platinum needle is now passed through the flame, after which the syringe is filled with the anaesthetic solution. Great care should be now taken to not allow the syringe or needle to become contaminated. It should not be placed in sight of the patient but handed to the dentist after he has prepared the tissue by drying it and treating the same with a solution of equal parts of tincture of iodin and grain alcohol.

Always employ platinum needles, for they can be properly sterilized, and not rust. Steel needles, while less expensive, do rust and cannot be sterilized over a flame without injury; also, they are very liable to break. If in any way the needle has become contaminated, pass again through the flame before handing to the doctor.

NITROUS OXIDE ANAESTHESIA PREPARATION OF THE PATIENT.

1. The patient should be instructed positively not to eat for at least two hours previous to the appointment. On presentation, tight clothing should be loosened, after which the patient should be taken to the surgical room, seated in the operating chair, covered with a long rubber apron, a towel being snugly wrapped around the neck to prevent blood from soiling the clothing.

As soon as the operation is over and the gas is discontinued remove the inhaler. Care should be taken to support the head until consciousness is regained, so the bobbing of the head will not injure the patient; also, be sure to have the sputum basin ready under the patient's chin, to receive any expectoration.

2. Administration of nitrous oxide and oxygen. Most people coming to a dental office for an anaesthetic are frightened, some fear they will be hurt, others fear they will receive an overdose of the anaesthetic. It is necessary to be kind to these patients and to reassure them. The ordeal is not pleasant, but it is not so bad as they anticipate.

It is very important to have the room quiet as long as the patient is conscious, both at the beginning of the anaesthetic and after the operation is finished, as noises are exaggerated, and, too, the patient may catch only a few words of the conversation, and get a wrong idea of what has been said.

CARE OF PATIENT AFTER OPERATION.

After the patient has been taken to the recovery room and wishes to lie down, it is best to have her lie on her right side, and see that she is well covered. The basin should be well under her chin so that she does not have to raise her head to expectorate. There should be plenty of fresh air in the room. If the patient feels nauseated, a glass of lukewarm salt water may be given. The best way is to have her sit up, rinse her mouth well, then drink the salt water all at once. This either settles the stomach or washes it out, and the patient generally feels much better immediately. A cold wet towel upon the face adds much to the comfort. After a few minutes' rest the patient may be dismissed.

We know of offices where they operate five chairs, administer lots of N20 and oxygen and only have one rest room, allowing the patients to remain in the dental chair without the disturbance caused by lurching forward or moving. They rarely get sick under these conditions.

X-RAY MACHINE.

One of the essential additions to the modern dental office is the X-ray machine. This machine can be made productive if the assistant takes the pictures and develops them without interruption of the dentist's time. This work must be done away from the dental chair, enabling the dentist to go on with his work. When a doctor knows he can get good pictures merely by the asking, he will want more, and an assistant who can care for these needs becomes more valuable, and in turn can command a higher salary. X-ray pictures are no more difficult to get than good kodak pictures. Careful attention, however, must be given to the correct technique; preparation of developer, temperature, time and washing. Do not guess at any operation in the dark room, for in this way many otherwise good pictures are ruined.

I would warn any assistant of the danger of X-ray burns. The danger may be eliminated by using a lead screen or a solid lead covering for the X-ray tube.

PROPHYLAXIS.

Prophylaxis is another operation which according to Dr. T. B. Hartzell is the greatest subject before the American dentist. He says "A correct understanding of the relationship that exists BETWEEN the bacterial masses which grow upon the teeth and the health of their surrounding tissues, if acted upon by every dentist would reduce all pyorrhea and decay by one-half."

Great aid may be given the patient by careful training in the correct use of the toothbrush. For this purpose, it is often well to keep a supply of good toothbrushes on hand, in order to give instructions not only in cleaning the teeth, but also in order to let the patient see a good toothbrush.

INCIDENTALS.

When reviewing such items as these listed below, saving in the general overhead expenses may seem trifling, but even such small savings assume large proportions during the year.

ALCOHOL.

Always keep alcohol in airtight containers, it evaporates rapidly. When dirty or cloudy, it may be cleaned by passing through filtering paper.

WAX.

Wax trimmed off of an impression may be melted and used again.

COTTON ROLLS.

Economy may be effected by cutting cotton rolls neither too long nor too short. It means a saving to use the proper size, for often three small ones are used when one large one would have answered the purpose.

ELECTRICITY.

Watch the electricity. The moment the doctor has finished in a room, turn out the light, likewise turn off fans, and all other electrical appliances when not in use. Use no extra lights during the noon hour.

CEMENT.

Do not put too much cement on the slab; a glance at the cavity preparation before mixing will help to determine the amount. Any powder remaining should be returned to the bottle at once. The cement manufacturers are willing and anxious to teach the correct technique of cement mixing; so call in the demonstrator and learn the right way, for a bad mix will often spoil an otherwise good piece of dentistry.

LAUNDRY.

A great saving may be effected in this item. Clean towels and uniforms are essential. A clean hand towel is essential each time the hands are washed, therefore the best plan is to have them small in size (no larger than a good sized napkin). When working in the laboratory, cleaning nickel, etc., wear a coverall.

EXAMINATION.

When a new patient comes in for dental work a thorough examination should be made, first by going over the mouth with explorer looking for cavities, which the assistant records on the examination sheet. Then a modeling compound impression is taken for study models, X-rays are taken and the patient is given an appointment. In the meantime, the doctor studies the X-rays, plans his work and estimates the amount of time for each operation. He then gives an estimate which will be large enough to include actual work and any which may have to be done over. This remains as a record of his plan of work. After the patient has agreed to have the work done, at the fee stated, a form letter is written confirming the agreement, of which a carbon copy is kept on file for reference.

BOOKKEEPING.

An assistant can keep all the dentist's books in one-half hour each day. The Bosworth plan of handling this is as follows: First: keep your appointment book. In order to make appointments to the best advantage, mark down in this book, not only the name of the patient, but the work to be done at the next appointment, as well as the location in the mouth. This will give you, as well as the doctor, an idea of the work to be done and will permit you to anticipate his needs for this specific operation. This plan will enable you to make more accurate appointments and will avoid the annoyance of overlapping appointments.

Second: Just before closing the day's work, copy the names of all patients for the following day, upon the daily efficiency sheet and day book. This includes all who have not eliminated their names from your list of appointed patients by the usual twenty-four hour notice. This will enable both you and the dentist to have a mental survey of each patient and class of work to be done, and in this way the work will go on without lost motion.

Third: This daily sheet is given to the dentist, who keeps it in the operating room, and when each patient presents himself at the chair, the dentist stamps the arriving time, an act which takes no longer than pushing a button, and when the patient leaves the chair, the time of departure is also stamped by the dentist. When the day's work is over, you have a correct record of those for whom you have worked; the service rendered; location in the mouth; time consumed in doing this work; adjustments, if any, cash paid; in fact, the entire effort of the office is recorded on this one sheet. Thus you have, on one sheet (which is filed in a loose leaf binder) a complete record of the entire production of the office. After the daily sheet has been stamped it comes back to the assistant, who records upon it the time consumed by each patient, and inserts in lead pencil (lightly) the minimum fee that will enable the dentist to show a profit. The assistant then turns this daily sheet over to the dentist for the final revision before a charge is made. The dentist will adjust the fees upward according to the class of service rendered, which call for a fee proportionate to skill and risk.

Fourth: Add to daily sheet all laboratory work.

Fifth: Post all charges made to the ledger, or account and service record.

Sixth: Render a statement on the first of each month for the balance shown, whether work is complete or not, keeping a collection list showing names of all patients, and amounts to whom statements have been mailed. This will keep before you the condition of your collections.

Seventh: On the first of every month take out the prophylaxis list of all patients who are due to call in accordance with the understanding which has been made with them to have their mouths examined at periodic times as a preventive measure. Mail to these patients an appointment card, stating the time you have reserved for them, and, of course, noting it on your appointment book at the same time.

Don't rely upon the telephone for this service. The card entering the home is always a reminder, and being seen by other members of the family, is favorable publicity. Good stationery for this purpose is important.

The explanation of this bookkeeping system may seem complicated, but when I tell you that an assistant can take care of the average dentist's books without requiring more than one-half hour daily, you can see its simplicity. Another feature that will appeal to the dentist, and I believe to the assistant, as well, is this, when the books are closed for the year your income tax statement is ready for the Government by simply using the final figures for the year.

GENERAL REMARKS.

In order to win any degree of success in any line of endeavor, you must have a genuine liking for your work, confidence in your employer and respect for him, be he a dentist, banker or any other business or professional man. Confidence and co-operation must be the rule, there is no exception.

Sensible formality is both desirable and necessary. It does not sound well to have the doctor address you as "Clara" or "Susan," but it always shows good taste when you say, "Yes, doctor," and "Dr. Thompson, Mrs. So and So just called and said," etc.

When children call be good to them, it's fun, anyway, and opens the road to the parent's heart. There is no better chance to combine pleasure and business.

After each patient is finally dismissed, follow him or her up with a nicely written letter, showing an interest in the work and reminding the patient that periodical calls for examination, etc., are important.

CONCLUSION.

In conclusion, it was not my idea to formulate a text book, nor to lay down infallible rules. I simply gave you a general idea of practices that have resulted from a comprehensive experience, not only of my own, but of others, both of assistants, dentist, and last, but by no means least, from the experience of dealers and salesmen. These last are regular clearing houses of information.

I know of no better way to close than to quote excerpts from a letter by Dr. E. A. Meservy of Kearney, Neb. He says: "Efficiency has always been the big idea of dentistry. A well trained and capable dental assistant is 50 per cent. of the working efficiency of any dental office. Every time a dentist leaves his operating room to work in the laboratory he loses money. I want my assistants to meet other assistants and the big men in dentistry so that when they read their articles or hear them talked about they will know them."

A CASE OF HAY FEVER FROM INFECTION

L. Gerald Smith, L.D.S.,D.D.S., Toronto.

On February 24th, 1920, Mrs. C. presented herself to me for attention.

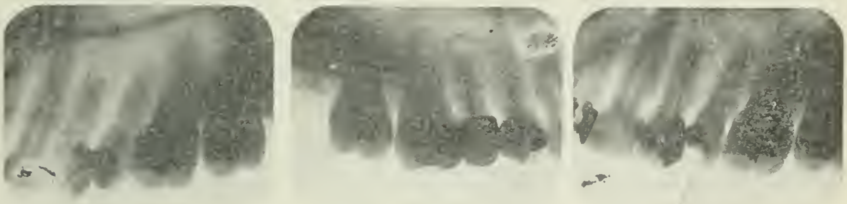
On examination I found that both upper second bicuspids had been treated and filled or crowned. The left had a gold shell which did not fit very well; had no contact and articulated poorly; the right one had a poor amalgam filling.

I advised patient to have Roentgenograms, and found the left bicuspid appeared in fairly good condition, but over and around the right bicuspid apparently a condition of condensing osteitis running to the wall of the antrum.

I inquired into the history of the teeth and found that they had been treated in 1910, but patient claimed to be quite healthy, having no organic trouble of any kind. I decided then to treat both bicuspids or at least to open into the canals and see in what shape they were. I opened into them, but not to apex, using all precautions, and sealed in dichloranime T., intending to open them at the next sitting.

Next day the patient came and I noticed that she had a bad cold and her eyes seemed quite inflamed, and on questioning her found she had hay fever (?) which had started in 1912 but did not bother her very much. This had gotten worse in the next two or three years and for the last four years it lasted all the year round. Every morning after rising she would sneeze for from one-half hour to one and one-half hours and often during the day.

Mrs. C. could not have any flowers around the house, nor could she use her back yard on account of flowers on either side. Roses especially seemed to bother her. She could not dust or sweep or ride in their car, especially on a dusty day. Even damp days seemed to bother her. In fact the last ride she had in a car caused her so much trouble she was confined to the house for a week, ashamed to go out on account of the condition of her eyes and nose.



I took another film to see if I could get any further light on conditions around these teeth, but these films seemed to be just as the first. However, I decided to extract. I operated on right side first, using conductive anesthesia. After removing saliva I painted well with iodine. I lanced gums full length of tooth and tried to extract with forceps, but could not apparently loosen root at all. I tried to spread the process around the tooth and broke a piece of it off, and then the cheek started to swell. I washed off this piece of process with sterile water and placed in culture tube. The laboratory finding was Strep. Viridans.

Expecting to be able to extract at this stage, I tried to get tooth out through the broken piece of process, but crown of tooth broke off, and I had to chisel rest of root out. Face was frightfully puffed out when I got through. Washed out with 1 per cent. Dakins and also painted tissues with tincture of iodine. Curretted socket and smoothed down broken pieces of process.

I made three trips to patient's home to wash out socket, and it was about ten days before swelling left entirely. About the eighth day I extracted left bicuspid, but experienced no difficulty in removing it.

After the extraction of the first tooth patient experienced the worst dose of hay fever she had ever had. Her eyes and nose were in a dreadfully inflamed condition. About the tenth day this condition started to abate and on the fifteenth day the hay-fever disappeared entirely. Three weeks after I had her buy roses and asked her to breathe in deeply. This she did and it did not bother her, and now she keeps flowers in almost all the rooms of her house. I had her beat the dustiest of carpets and she had no discomfort. Then one dusty warm day I had her go for a motor ride. She enjoyed it so much they stayed out all day, suffering no discomfort. Then she went to the stable and had her husband shake up some hay, and even that did not bother her. About a month later she 'phoned me that she had a return of the hay fever lasting about fifteen minutes. Three months later, on July 24th, she 'phoned again and has never had a recurrence since, and to day, September 1st, she has just 'phoned to tell me that the hay fever has left entirely.

THE DOMINION DENTAL COUNCIL OF CANADA

W. D. Cowan, Regina, Sask.

WHAT IT IS, WHAT IT DOES, AND HOW IT DOES IT.

The Dominion Dental Council of Canada does not issue a license. The D.D.C. of C. does issue a Certificate of Qualification which entitles the holder thereof to a license in all of the agreeing provinces. With the exception of Quebec all of the provinces of Canada and the Yukon will grant a license without examination to a holder of the Certificate of Qualification but the holder of the Certificate must pay the provincial registration fee when the license is granted. The Certificate of Qualification can only be obtained by passing an examination. There are three classes of examination, viz., A., C. and D. Those who can take class A examination are recent graduates from a Canadian Dental School. They must have the required matriculation and pass in the following subjects as grouped herein.

(a) Operative Dentistry.

(b) Prosthetic Dentistry, Crown and Bridge work. Metallurgy.
(c) Materia Medica, Therapeutics.
(d) Orthodontia.
(e) Pathology, Bacteriology.
(f) Anatomy.
(g) Physiology, Histology.
(h) Medicine and Surgery.
(i) Anaesthetics.
(j) Physics and Chemistry.
(k) Jurisprudence and Ethics.

The examinations shall be written and clinical.

Clinical examinations will be conducted in:

A. Operative Dentistry, which shall include examinations of patient, diagnosis, treatment, operations upon patients, etc.

B. Prosthetic Dentistry, which shall include any of the usual operations in mechanism, adjustment, crown and bridge work.

The Matriculation required for class A is equal to Matriculation in Arts with the Faculty of a Canadian University.

C. Those who can take the class C examination must have been registered in one of the agreeing provinces prior to January 1st, 1908, must prove regular, legal, ethical practice for ten years prior to date of application and pass in the following subjects, viz.:

Operative Dentistry, both practical and written.
Prosthetic Dentistry, both practical and written.
Crown and Bridge work.
Anaesthetics.
Materia Medica and Therapeutics.

D. Those who can take class D examination must have been registered in one of the agreeing provinces for five years prior to date of application. Must prove regular legal, ethical practice for those five years and pass in the following subjects, viz.:

(a) Operative Dentistry, including inlays.
(b) Prosthetic Dentistry.
(c) Crown and Bridge work.
(d) Medicine and Surgery.
(e) Anaesthetics.
(f) Materia Medica and Therapeutics.
(g) Pathology and Bacteriology.
(h) Orthodontia.

The clinical examination in Classes C and D shall be the same as in Class A.

. The Dominion Dental Council does not deal with foreign graduates. The D.D. of C. does nationalize a license already granted by one of the agreeing provinces. (Quebec always excepted.)

Students attending a Canadian Dental School located in any of the agreeing provinces may take the class "A" examination as they pass through college each year taking the subjects already passed in college excepting that Operative Dentistry, Prosthetic Dentistry and Orthodontia are always final year subjects.

Examinations are held twice every year and are open to all qualified as above. The summer examination commences the second Tuesday in June. The fall examination commences the first week in September. *However the fall examination of* 1920 *will commence on Monday, October the Eighteenth and continue until completed.*

In classes C and D the fee is one hundred dollars. In class A it is five dollars per group of subjects to a maximum of fifty dollars. Where a supplemental is necessary five dollars per group of subjects must be paid.

Provided enough candidates present themselves the examination will be held at one point in each agreeing province.

Evidence of unethical practice as determined by the D.D.C. Code of Ethics and as revealed by the inquiries made is a barrier to all examinations.

If you intend writing please communicate with the Secretary at as early a date as possible indicating the province in which you wish to write, say where you have been practicing, what college you have graduated from or are attending and give as full particulars regarding yourself as is necessary to properly determine your class as above.

Before a Certificate of Qualification is issued the party to whom it is to be issued must subscribe to the D.D.C. Code of Ethics and agree to surrender his Certificate if he violates the terms of the Code.

Dental Societies

SUMMARY OF MINUTES OF MEETING OF DOMINION DENTAL COUNCIL, HELD IN OTTAWA AUGUST 16, 1920

At the meeting of the Dominion Dental Council held in Ottawa, August 14th and 16th, there was a full attendance of representatives. Two notices of motion to amen dthe constitution were submitted. One of these came from the representative from New Brunswick and called for the re-establishment of class "C" certificates on the old basis of ten years regular, legal, ethical, practice. The Council, however, held, after a very full discussion, that the certificate of qualification should only be granted upon the applicant passing an examination, and it was consequently decided that an examination should be held for everyone. To meet the condition, it was decided to create a new examination class, so that hereafter there will be three examination classes instead of two as formerly. The time spent in practice over five years will be considered as equivalent to certain subjects. The classes are known as A, C and D. Those who are required to take class "A" are those who have recently graduated (those who are attending a college located in an agreeing province can take class "A" progressively). These are required to take all the subjects. Class "D" are those who have been in practice five years and less than ten. They must be able to show five years of regular, legal, ethical practice, and pass in operative and prosthetic both practical and written, crown and bridge work, medicine and surgery, anaesthetics, materia medica, and therapeutics, pathology and bacteriology, orthodontia. For class "C" it is provided that they must have been registered on the first of January, 1908, and have been in regular, legal, ethical practice for ten years prior to date of application. These must pass an examination in operative and prosthetic both practical and written, crown and bridge work, anaesthetics and materia medica and therapeutics. The practical examination is the same in all classes, and the paper written upon and the marks required for a pass are the same in all classes.

It was also decided to hold two regular examinations every year instead of one as formerly. The chief reason for this was that many of the students attending college found it difficult to return to the examination point so soon after getting away from the college term. The date of the fall examination this year will be October 18th, but each year hereafter the fall examination will commence the first week in September.

The notice of motion given by the representative for Alberta was fully debated, and resulted in the fee for presiding examiners and representatives to Council being fixed at fifteen dollars per day and necessary expenses. The fee to the examiners for valuing papers was raised from twenty-five to fifty cents per paper.

The secretary reported that there were 151 candidates at the recent examination, this being by far the largest on record.

The auditors' report showed the condition of the finances to be as follows:

Cash—last report	$ 4,359.84
Receipts—Class A	2,337.50
" —Class C	18,200.00
" —Class D	900.00
Certificate re-issued	2.00
Interest Victory Bonds	467.50
Balance due secretary, petty cash	202.69
Total	$26,469.53

DISBURSEMENTS.

Liability payment, W. D. Cowan	$70.46	
Auditing	45.00	
	———	$ 115.46
Examiners' fees		754.50
Examiners' expenses		93.95
Printing and stationery		585.55
Postage and telegrams		191.42
Express		125.33
Executive expenses		641.95
Legal expenses		50.00
National Trust fee		9.35
Fees returned (rejected applicants)		1,965.00
Clerical assistance		600.00
Exchange (bank charges)		34.45
Salary (the secretary)		300.00
Engrossing		115.00
N.S.F. cheque		20.00
Bond premium		20.00
Investment (Victory Bonds)		17,000.00

Cash on hand	3,847.57
Total	$26,469.53

(Signed) DAWSON & ROSBOROUGH,
Auditors.

The certificate of matriculation issued by the Canadian Faculties Association is hereafter to be accepted by the D.D.C. for purposes of matriculation.

The fee payable for the re-issue of a certificate where the original was destroyed by fire or otherwise was raised from two to five dollars.

The Yukon Council having amended the Dental Act of that territory so as to accept the D.D.C. certificate of qualification, an application was made to have that territory treated as an agreeing district. This was referred to the executive for action.

The request of a number of persons who had seen overseas service that a part of their examination be waived because of such service was considered, and it was decided that "It is inadvisable in the interest of both the student and the public to waive any portion of the examination."

The officers elected were:

President—Dr. H. F. Whittaker, Edmonton.
1st Vice-President—Dr. Harry R. Abbott, London.
2nd Vice-President—Dr. Jas. S. Bagnall, Charlottetown.
Secretary-Treasurer—Dr. W. D. Cowan, Regina.

These form the executive committee.

(Signed) W. D. COWAN,
Secretary, D.D.C.

THE CANADIAN ORAL PROPHYLACTIC ASSOCIATION

Toronto, July 19th, 1920.

Dear Doctor,—

I wish to announce that Dr. Harry S. Thomson, of Moncton, N.B., and lately Major in the C.A.D.C. in Toronto, has accepted the position of Dental Executive of our Association, and will take entire charge of its affairs.

The need of someone to devote his whole time to this work has been felt for some years, and we feel that Dr. Thomson comes well equipped for the task. He will also be Dental

Executive for the Department of Dental Research of University of Toronto. We are sure he can be of great service to you. Use him.

Yours fraternally,
ANDREW J. McDONAGH.
President C.O.P.A.

July 19th, 1920.

Dear Doctor,—

As the above letter says, I am to have entire charge of the affairs of the C.O.P.A. That means that my whole time and energies are to be devoted to your service, using all the resources of the C.O.P.A. to that end.

This, as you know, includes all their educational work with which you are familiar, and also the Department of Dental Research of University of Toronto, which is maintained by them. This opens up a wonderful opportunity to me to be of great service to you, and an opportunity for you and me together to be of great service to the profession all over Canada.

I am enclosing a pamphlet which will tell you some of the things we are going to try and do for a starter.

This work, as you know, is perpetuated by the royalties received from the sales of Hutax Mouth Products. Time and the increasing demand for these products prove their perfectness and efficiency, and you cannot but realize the safety of recommending them to your patients, knowing that they stand for the highest standards in mouth preparations, and every cent. of profit received from their sale comes back to the profession in education and charity.

Yours fraternally,
HARRY S. THOMSON, D.M.D.

DEPARTMENT OF DENTAL RESEARCH UNIVERSITY OF TORONTO

OUR PROGRAMME.

1. To maintain for your use as your own property, a thoroughly equipped, scientific Dental Research Department.

2. To devote our whole time, resources and energy to the professional needs of every dentist in Canada, and, through him, to the needs of the public at large.

3. To assist dentists everywhere to establish and carry on original research work, and to co-operate with and encourage any other scientific work or research, and to affiliate with the

best possible organizations that carry on such work, and exchange with them results and findings of value.

4. To get to you from time to time, without cost to you, complete and detailed reports of the findings of this research.

5. To get from you your particular needs along research lines that we may be of the right service to you.

6. To furnish you with scientific matter that you might better serve your patients as a scientific dentist.

7. To furnish you with material that you might better educate your community in proper Oral Hygiene and Mouth Health.

OUR POLICY.

The policy of the Canadian Oral Prophylactic Association is threefold.

First, to assist the dentist to assist himself professionally.

This we are doing through the Department Dental Research of the University of Toronto, where a staff of trained workers are studying the changes caused by disease, diet, etc., in the mouth, and the cause and possible prevention of these changes: also the efficiency of cements and amalgams, mouth cleansing preparations, etc. This research work is carried on solely for the good of the profession throughout Canada from coast to coast, and the reports and findings of this work will be got to you from time to time through this bulletin and by personal letters.

We wish to be of the very highest service to you and in order to be that, we want you to let us know how we can serve you, let us know your problems, what is worrying you, and we will try and work them out for you where we have the facilities and the very best of equipment working in conjunction with research in other branches of science. A personal letter from you to this department might bring you in a little closer touch than our mailing list does and our reply to that letter, we promise, will contain something of value.

The second phase of our work is: To assist the dentist to assist his community, by furnishing him helps to carry on educational work on mouth health.

After all, a man's usefulness in this world is measured by the service he has rendered to the people of his community, be it large or small, and the day is past when a man can live unto himself alone. Just being a dentist is not sufficient, he must have a vision of the broader usefulness of his services. His duty to his patient does not end when he restores his mouth to normal, he must educate him and his children how to keep their mouths normal, and what serious consequences follow the neglect to keep them so. For this means, the second phase of our work is at your disposal. Again, this is all free of any cost to you, we have had the very best men in our profession prepare charts, lectures, lantern slides, pamphlets, booklets, etc., which will wonderfully help you in your work and are an excellent source of education to the public. We have four skeleton lectures, some of them with lantern slides, which we will gladly send you, which will give you a good working text for your talk to the Women's Institute, Nurses' Training School, School Children, Women's Clubs, Boys' Clubs and the public in general. We have a lecture pamphlet on Teeth and Health which will give your school teachers a new idea of what a clean mouth means to health. We have another pamphlet on "Care of the Teeth" which opens up this subject to mothers and fathers in a lucid and interesting way. These and many more are all ready to go to you for the asking, and help you fill a larger place in your professional life in your own community. We also have a number of highly instructive and interesting moving picture films which tell a story with an outstanding moral; these we will be glad to loan in turn to your provincial or local society for exhibition and when available will send them express prepaid to your local committee. This work is organized to be of the utmost service to our profession all over Canada, and that means you, so now let us get together, let us help you with your work whether it is purely scientific or educational, and with your desire to accomplish, plus our entire resources and working equipment, which are really yours, and maintained solely for your benefit, we should be able to do some of that good we have long hoped to do and accomplish wonders for our profession.

The third phase of our work will be dealt with in a personal letter, to follow.

DEPARTMENT OF INFORMATION.

This department is not intended for the use of our members who live in the larger cities, but for the men who live in the smaller cities and towns.

So very often in the practice of every man there arise problems that baffle him and that he feels he must discuss with some one: The men in the cities can do this through their local organizations, but the men in the smaller towns can not; if they discuss it at all they must discuss it with their direct competitor and this is not always satisfactory for it usually happens that the problem concerns one who was a former patient of his, and a description of the case will at once identify the patient, this always causes a restraint and a handicap to free and unbiased discussion. In that case the dentist decides it best to worry through these problems alone, aided as best he can by text books and articles in what few journals he has available. To take care of this condition we have decided to open up along with our Research Department a Department of Information, and we will try and keep you posted on your particularly troublesome subjects. This is how we propose to do it.

Suppose that you are interested or troubled or feel that you haven't enough information on one of the many present methods of treatment, say: Vincents' Angina, Howe's Silver Nitrate Theory, Hall's Method of Impression Taking, Nesbitt's Cast Clasps, Coolidge's Theory of Root Canal Filing, Porcelain Jacket Crowns, Cummer's Partial Plates, or any one of the many newer things. Your text books give you very little information on them and you only take one or two journals; you write us a letter asking us for information as to where you can get the latest thought, or the complete matter on this particular subject, and we will let you know by return mail just what magazine or book it appears in and on what particular page. If the magazine or book is not available we will endeavor to get to you a typewritten copy of the entire matter. If there is something of a technical nature in the article that you can't quite get clear we will endeavor to get a personal opinion from the author for you on that point. Can't you see what a great source of information this is going to be to you and what an inspiration it should be for you to conduct study clubs and classes in your own community? Start right now and use it and let us show you that we are in earnest in our efforts to be of the utmost service to the entire profession from coast to coast, for after all that is just what we are put here for, that is our job.

HARRY S. THOMSON, D.M.D.

OFFICERS OF THE NEW BRUNSWICK DENTAL SOCIETY

Dr. O. B. Price, Moncton, president; Dr. W. R. Wilkes, St. John, vice-president; Dr. F. A. Godsoe, St. John, secretary-treasurer. Members of council—Dr. W. P. Broderick, Dr. W. P. Bonnell, Dr. C. F. Gorham.

STANDING COMMITTEES OF THE CANADIAN DENTAL ASSOCIATION

Finance.—Dr. J. Bothwell, Dr. A. E. Webster, Dr. Gordon McLean, Dr. W. Seccombe, all of Toronto; Dr. Fleming, Prescott.

Research.—Dr. W. Seccombe, Dr. McLean, Dr. Emery Jones, New Westminster, B.C.; Dr. G. F. Bush, Winnipeg; Dr. J. P. Bagnall, Charlottetown.

Arrangements.—Dr. W. A. Black, Toronto; Col. Walter Thompson, Hamilton.

Foreign Relations.—Dr. A. E. Webster, Toronto; Dr. F. Woodbury, Halifax; Dr. E. Dubeau, Montreal; Dr. H. F. Whittaker, Edmonton; Dr. W. Seccombe.

Legislation.—Dr. W. D. Cowan, Regina; Dr. Bush, Winnipeg; Dr. J. W. Clay, Calgary.

Oral Hygiene.—Dr. F. J. Conboy, Toronto; Dr. Seccombe, Dr. J. Bothwell, Dr. H. Thompson, Dr. George Grieve, all of Toronto.

Programme.—Dr. G. McLean, Dr. Percy Moore, Hamilton; Dr. J. Bothwell, Dr. Gausby, Dr. W. B. Amy, Toronto.

Dental Education.—Dr. Frank Woodbury, Halifax; Dr. E. Dubeau, Montreal; Dr. Seccombe.

Editorial

EDITOR:
A. E. Webster, M.D., D.D.S., L.D.S., Toronto, Canada.
ASSOCIATE EDITORS:
ONTARIO—M. F. Cross, L.D.S., D.D.S., Ottawa. Carl E. Klotz, L.D.S., St. Catharines.
QUEBEC—Eudore Debeau, L.D.S., D.D.S., 396 St. Denis Street, Montreal; Stanley Burns, D.D.S., L.D.S., 750 St. Catherine Street, Montreal; A. W. Thornton, D.D.S., L.D.S., McGill University, Montreal.
ALBERTA—H. F. Whitaker, D.D.S., L.D.S., Edmonton.
NEW BRUNSWICK—Jas. M. Magee, L.D.S., D.D.S., St. John.
NOVA SCOTIA—Frank Woodbury, L.D.S., D.D.S., Halifax.
SASKATCHEWAN—W. D. Cowan, L.D.S., Regina.
PRINCE EDWARD ISLAND—J. S. Bagnall, D.D.S., L.D.S., Charlottetown.
MANITOBA—M. H. Garvin, D.D.S., L.D.S., Winnipeg.
BRITISH COLUMBIA—H. T. Minogue, D.D.S., L.D.S., Vancouver..

VOL. XXXII. TORONTO, SEPTEMBER 15, 1920. No. 9.

THE NATIONAL DENTAL ASSOCIATION BOSTON

The largest and most important dental organization on this continent held its annual meeting in Boston, August 23-27, 1920. In point of attendance, scientific interest, and dental influence, the meeting just held equals, if not surpasses, all previous gatherings. It is impossible to give any adequate idea of such a wonderful aggregation of dental interest. One person cannot see or hear or comprehend a tenth of what is presented. It is a hundred post-graduate courses in one week. Every phase of the subject, from history and development to practice and future place in society, is illustrated and discussed. The official program alone contained eighty-four pages of matter, not to mention the programs of several other societies which make the National meeting an opportune time for their annual gatherings. Among these may be mentioned, all the fraternal societies associated with dentistry, orthodontists, periodontists, exodontists, prosthodontists, examining boards, faculties associations, dental golf associations, and many minor organizations and committees of local socieities.

The program was of special interest, and shows quite distinctly the direction in which dentistry is tending. Special interest seems to be pointing towards public or state dental service. If this be a correct interpretation of the meaning of the National meeting, a broader and less selfish attitude of the profession will be demanded.

Among the special interests was the address by Sir Kenneth Goadby, who took for his subject, "The Diagnosis and Treatment of Latent Infection about the Jaws." His reception was magnificent, his address an inspiration, and his farewell a charm.

The reports of the research institute as usual attracted large numbers. Unfortunately the opportunity to hear and see were not as good as they should have been. When two or three men are addressing as many audiences in the same room a great deal of confusion exists. One section was protected from noise and disturbance from the main corridor by a curtain. The sections met under difficulties in most cases.

The exhibits had a splendid room through which every member passed to the lectures and clinics. There were about two hundred firms exhibiting, some of whom made a complete dental exhibit. The attendance at the exhibits was always full. There were dozens of exhibits along the lines of preventive dentistry. Among these were exhibits of machines to illustrate the abrasive or non-abrasive character of tooth powders and pastes. One would judge from these demonstrations that a mouth preparation which has an abrasive action should not be used. The manufacturers and the profession are looking for a tooth powder that will remove concretions and stains from the teeth and at the same time not abrade. It looks like an impossibility. Just how a substance can remove another substance from the teeth without abrasion or solution is difficult to understand.

In this connection Dr. T. Sydney Smith presented a method of brushing the teeth which is different from that generally taught. He suggests a soft brush with bristles of equal length and close together. Instead of brushing from the gums towards the teeth, he recommends brushing from the teeth towards the gums following the direction the food travels in mastication.

Another interesting presentation was that of Dr. Kramer, who is the dentist in charge of dental treatment of tuberculous patients in a sanatorium in Colorado. He demonstrated that tuberculous sputum inoculated into fresh wounds of the gums in lower animals will give acute general tuberculosis. This indicates the danger of infection when the gums are wounded from prophylaxis, brushing or other dental operations.

GOLF IN DENTISTRY

Of the many outdoor games few are suitable for dentists. Some are too violent, others dangerous to hands and eyes. Any game which makes the hands rough, discolored, or sore is not suitable. For many years dentists in England have played golf, in America it has taken on more slowly. Very few dentists in America have played more than twenty years. There has always been a good deal of prejudice against golf among those who have not tried it. A speaker at the formation of the Golf Association of the National Dental Association said it was the duty of golfers to encourage other dentists to play the game because it was so good for the health.

At each meeting of the Canadian Dental Association quite a few of the members enjoy a game on the local links. Several times Dr. Fred Mallory has suggested the formation of a Canadian Dental Golf Association to meet before or during the general meeting, but nothing has yet come of it. It is hoped he will be encouraged to go further and complete an organization.

In many cities in the United States there is a local Dental Golf Association which meets two or three times every year for a tournament.

The National Dental Golf Association at its organization passed the following by-laws:

Name.—The name of this association shall be The National Dental Golf Association.

Executive.—The organization shall be governed by six directors, three of whom shall be chosen by the members of the Association at each Annual Meeting. They shall hold office until their successors are elected and qualify. They shall be known as President, Vice-President, and Secretary-Treasurer, respectively, and their duties shall be such as usually pertain to the respective offices. The three last retiring presidents of the Association shall be Directors of the Association.

Funds.—To provide funds for administration and for advancement on tournament expenses, the following dues and fees are required:

1st. A Membership Fee of $3.00 for the general funds of the Association, to be paid upon enrollment as a member of the Association. This may be done at any time. The payment of this perpetuates the membership. Once a member, always a member.

2nd. A Playing Fee of $1.00 for the Tournament Fund of the Association. This fee, and all hereafter are payable at the first tee and shall be paid only in the event that the member enter the tournament, the idea being that aside from the enrollment fee all expenses are paid by those who participate in any year.

3rd. The Tournament Fees.—There shall be paid then, at the first tee, by all entrants to the tournament, fees as follows:

(a) The Playing Fee of $1.00 above mentioned.
(b) The Membership Fee of $3.00 above mentioned, if not already a member.
(c) The Greens' Fee, charged by the local club as arranged for by the local committee.
(d) The Dinner Fee, as determined by the local committee in charge.

Membership.—Any male member of the N. D. A. in good standing, or accredited guest, becomes automatically a member of this Association upon acceptance of its by-laws and payment of the membership fee.

Play.—No member shall enter play except upon payment of the prescribed fees.

The Tournament shall be held either just before, or during, or just after the Annual Meeting of the N. D. A.; the time and place to be determined in advance by the directors, co-operating with a local committee of their own choosing; provided that the time shall not be in conflict with the scientific program of the N. D. A.

Handicaps.—Handicaps shall be limited to 22 members playing in any competition must play on their lowest club handicap and when playing on their own club course shall be penalized two strokes.

The Annual Dinner and Meeting shall be held on the evening of the day of the tournament.

Accounts.—No accounts shall be kept with the members. All privileges automatically follow compliance with the provisions of the by-laws.

Amendments.—These by-laws may be amended at any Annual Meeting by a three-quarter vote of the members present; or between meetings by a three-quarter vote of the members who register their votes by mail within two weeks after a call therefor is made.

The rules of play in the British Dental Golf Association are as follows:

Play shall be against "bogey," eighteen holes, handicaps limited to eighteen. Competitors not having a handicap from any recognized golf club must start from "scratch"; a player's first round to be his competition round. Members of the course on which the competition is being held shall add two strokes to their present handicap. All cards must be returned before 6 p.m.

Ties to be played off within two days.

The winner shall hold and be responsible for the Cup until the next Annual Meeting.

The Bournemouth Dental Golf Society will give a box of balls for the lowest score in the last nine holes, the winner of the Irish Cup to be barred from winning this. In the event of a tie, the prize to be divided or the tie played off within two days.

All disputes shall be settled according to the rules of golf as interpreted by "The Royal and Ancient Golf Club of St. Andrews," subject to the local rules of the Golf Club.

DEPARTMENT OF SOLDIERS CIVIL RE-ESTABLISHMENT—DENTAL SERVICE REGULATIONS

Among these regulations appear some remarkable paragraphs. We quote below a few for the edification of the dental profession.

(a) Director of Dental Services—This officer shall have charge of the dental services and shall be responsible to the Director of Medical Services.

(b) Dental surgeons employed by the department in medical institutions shall be responsible directly to the superintendent of the institution that all dental work required is performed and that the regulations of the institution are properly observed. All reports of work performed and all requisitions for supplies and equipment shall be passed to the superintendent for approval and necessary action.

(c) Dental surgeons employed by the department in clinics that are not located in medical institutions, will be responsible to the Unit Medical Director of their unit for the observance of dental regulations and will pass to him all reports and requisitions affecting their individual clinics. The Unit Medical Director will then forward these to the Director of Dental Services, Ottawa.

(e) Civilian dentists employed by the Department shall be under the control of the Unit Medical Director.

Clause 12, Sections (b) and (c) say that a civilian dentist when employed must make out a chart of the dental work to be done and submit it to the Unit Medical Director, who must satisfy himself that the patient is eligible to have the work done and that the charges are in accordance with the schedule of fees attached.

Following the regulations is a schedule of fees which is supposed to cover the operations which a dentist may do, and receive payment for. This is a most interesting document not for what it contains but for what it does not contain. Again we know no better way of letting the profession know what a dentist's duties and functions are as understood by the Department of Militia and Defence of Canada. Just notice that outside of purely mechanical operations the dentist may give the patient two treatments for pyorrhœa at $1.50 each, and if he thinks others are needed he must ask the Medical Officer if he may do them. Not one Medical Officer in a thousand has any idea whether the cases which really need such treatment need more or less of it. If a patient needs treatment for pyorrhœa it cannot be done for $3.00.

SCHEDULE OF FEES.

Cleaning of teeth	$1.50
Fillings—	
Oxyphosphate	1.50
Silicate	2.00
Cement (pulp capping)	1.00
Devitalization	.50
Root filling	1.50
Amalgams (Simple)	1.50
(Compound)	2.00
Gold fillings when specially authorized in exceptional cases—	
(Simple)	3.50
(Compound)	5.00
Gold Inlays—	
(Simple)	3.50
(Compound)	5.00

Rubber dam must be used with all fillings.

Extractions—	
Without anesthetic for one tooth	.50
With local anesthetic, one tooth	1.50
For each additional tooth	.50
Dentures—	
Partials for four teeth or under	10.00
For each additional tooth over four	1.00
With gold clasps, for each clasp	1.50
Full upper dentures	20.00
Full lower dentures	20.00
Both full upper and full lower at the same time for the same patient	35.00
Charges for extraction of teeth when plates follow are not allowed.	
Repair of dentures	3.00
For replacing or adding, each tooth	1.00
S.S.W. Justi, Trubyte or Twentieth Century teeth must be used.	
Crowns—	
Gold	10.00
Gold with dummy	15.00
Porcelain	8.00

DENTAL SERVICES.

Amendment issued August 14th. 1920. Chapter XIV., Section 1, Clause 16.

Bridges—	
Abutments each	$10.00
Dummies, each	6.00
Replacing facing or bridge, each tooth	2.00

Pyorrhœa cases to be given two treatments at $1.50 each. and should trouble continue, cases must be referred to the Unit Medical Director for authority for additional treatment.

If a dentist can only be paid for what is indicated by the above schedule of fees then dentistry is not a profession. If dentists' opinions on oral hygiene, public health, contagious diseases, mastication and assimilation of food and the relation of mouth conditions to focal infection, acute and chronic diseases, as well as advice as to what dental treatment is to be instituted, are of no value, then there must be a complete reorganization of dental education and practice. But the fact is the legal organization of dentistry as well as the general public recognizes that dentists have knowledge of these subjects and are entitled to collect a fee for advice in them. According to this schedule a dentist is not entitled to charge a fee for his opinion or advice which in a great number of cases is far more valuable than his operations.

No reputable dentist could subscribe to what is implied in this schedule of fees. It is this ignorance of the duties and responsibilities of a dentist to the general public that makes the profession chafe under military regulations. What is recognized by individuals and the public generally is not accepted by the military. Civil dentistry is largely to blame for this state of affairs. They make no objection where military officers heap insult upon their heads.

It is specifically stated in the regulations that the Director of Dental Services is under the Medical Services. There can be no justification for this situation. It is not so in civil life, and why should it be so in military life. Experience in civil life has shown beyond doubt that wherever dentistry conducts its own affairs the people are much better served than where it is directed by others. Military experience has proven to the hilt this same fact. It is not necessary to refer to the complete breakdown of the medical organization of dentistry in Canada at the beginning of the war. It is a matter of history, In the face of all kinds of handicaps the C.A.D.C. has proven to the soldier, the officer and the public that dentistry organized and conducted by dentists is a boon not to be obtained in any other way. With this history before the officers at Ottawa they set out to place dentistry back to where it was before the war to be mismanaged, neglected and disgraced.

It is difficult to understand how a self-respecting dentist in civil practice could submit to having an officer who knows nothing about dentistry dictate to him what dental operations are to be done and what are to be paid for them.

DENTISTRY AND THE ARMY

A Correction

In the August issue we discussed the doings of the C.A.D.C. at some length. Among other things a recent order sent to the general officer commanding each military district re dental treatment came in for some remarks. We said that both the Director of Dental Services and the Director of Medical Services signed the order. The Director of Medical Services admitted having signed it, but the Director of Dental Services says he did not sign it. We are glad to make this correction.

So that the profession may know what was under discussion at the Ottawa meeting and what the dental profession objected to, we print the order in full.

Ottawa, August 6th, 1920.

Circular Letter No. 538.

To General Officer Commanding,
Military District No.
Toronto, Ontario.

DENTAL TREATMENT—PERMANENT FORCE

With reference to the subject marginally cited, I am directed to inform you that the following temporary procedure is to be brought into immediate effect regarding dental treatment of the Permanent Force personnel:

1. On attestation, the Medical Officer of the unit will examine the recruit's mouth, and fill out a dental history sheet recording actual conditions.

2. Should the recruit require treatment, he will be sent, with his Dental History Sheet to the Dental Officer, who will carry out the necessary treatment, and indicate the same upon the Dental History Sheet, returning the same with his bill in accordance with authorized schedule.

3. On completion of treatment the Medical Officer will again examine the recruit and certify to the correctness of the Dental History Sheet, and the bill, his certificate upon the bill being considered full authority for payment.

4. All subsequent treatments will be carried out in a similar manner.

5. Treatments will be limited to those actually required to preserve a reasonable sanitary condition. The use of gold fillings, crowns, bridges, etc., or any expensive appliances must be carefully restricted, and will only be employed on the authority of the G. O. C. of the district on advice from the Dental Officer and the Medical Officer that less expensive forms of treatment would not be satisfactory.

Pending the organization of the Canadian Army Dental Corps, authority is granted to the G. O. C. of the District to refer cases of the Permanent Force, requiring dental treatment to ex-officers of the C.A.D.C. C.E.F. preferably those who have had overseas service, should such not be available to any dental surgeon who has held a commission in the Canadian Militia.

Pending the disbandment of the District Dental Officers still employed to supervise dental work for returned soldiers, the G. O. C. may place the control of this procedure in the hands of these District Dental Officers.

Pending a revised scale of fees for dental work which will shortly be published in General Orders, the scale of fees at present followed in the case of dental work for overseas personnel carried out by the Militia Department and Department of Soldier's Civil Re-Establishment, will be followed.

(Signed) H. F. CORBUTT, Lt.-Col.
For Major-General,
Adjutant-General.

Every dentist and medical man in Canada should read this order so that they might have a full appreciation of the calibre of men who direct military affairs in times of peace. How much thought or consideration was given the soldier when such an order was being prepared? The officers at Ottawa seem to be in a big game spending their time in attempts to put something over each other. The Director of Medical Services concurred in this order though he denies authorship When he signed it he knew that no medical officer who had not special dental training could carry it out. The order makes the medical service look ridiculous, but he had to send it out because it came from higher up. The authorship must have been in the A.G.'s office or the minister's.

Section 1 of the order says "the Medical Officer of the unit will examine the recruit's mouth and fill out a Dental History Sheet recording actual conditions." Quite an undertaking for an officer who has had no dental training, especially when he is asked to record actual conditions. To make the examiner's opinions effective the recruit is compelled to submit to the treatment and the dental officer compelled to carry it out.

What good is a dental education or why should young men spend four years getting a dental training, or why should untrained persons be prohibited from practising dentistry if a medical officer who knows nothing about dentistry can not only dictate treatment to a trained dentist, but compel anyone to submit to it. It is stupid, ridiculous and inhuman. No dentist in the Province of Ontario can retain his license and accept direction or dictation or employment by one who has not a dental training. What has been fought out in the courts and established beyond doubt for the protection of the public must be perpetrated on the defenceless soldier. It may be claimed by the officers at Ottawa that a medical officer knows enough about dentistry to make an oral examination, dictate the treatment and after an examination decide whether it was properly carried out or not. In other words a medical officer is to be constituted an examiner in dentistry. This is a responsibility we feel satisfied no medical officer would accept. There is no dental training given a medical student and there is no authority given a medical licentiate to practice dentistry in any province in Canada, and yet the military presumes that a medical officer can diagnose and prescribe treatment for dental diseases.

Editorial Notes

There is an insistent demand for more dental clinics in the city of Hamilton.

⁂

The Province of Quebec has not yet decided to join the Dominion Dental Council of Canada.

⁂

The next biennial meeting of the Canadian Dental Association will be held in Toronto.

⁂

Dr. Conboy is to give a course of lectures to the nurses in Ottawa who are engaged in public school nursing.

⁂

Dr. Winthrope, Saskatoon, addressed the Kiwanis Club of that city on the position and advances in dentistry of the past few years.

⁂

The Ottawa dentists provided a drive and evening entertainment at the Aquatic Club to the members of the Canadian Dental Association.

⁂

Col. R. B. O'Sullivan, dental director of the D.S.C.R. headquarters, Ottawa, has recently visited the dental units in the Eastern Provinces.

⁂

Dr. W. A. Morrison's dental office, Peterboro, Ont., was broken into a few weeks ago and robbed of about $200 of gold and other precious metals.

⁂

The name of E. C. Keyes, who wrote the recent Dominion Council Examination, is to be added to those who passed in physiology and histology.

⁂

Unfortunately the examiner in medicine and surgery has been late in sending in his return, and consequently the report had to be sent out without it.

There was an exhibit of a dental office equipment at the Canadian National Exhibition under the heading, "The Department of Education," Ontario.

⁂

$2,000 have been asked by the Hamilton Health Association to equip a dental clinic in the Children's Sanatorium. The "Spectator" is a strong advocate of the grant.

⁂

Drs. F. Knight, J. McIntyre, and J. Livett have been appointed on the dental staff of the Board of Health, Toronto, at a salary of $1,110 each for part time service.

⁂

Dr. A. J. McDonagh, Toronto, president of the Academy of Peridontia, which held its annual meeting in Boston, presented a paper on diet and its relation to dental disease.

⁂

On account of the meeting of the Canadian Dental Association at Ottawa on August 14, it was decided not to have any special meetings of the New Brunswick Association with papers and clinics arranged for as in former years. Several New Brunswick dentists will attend the convention at Ottawa.

⁂

The press reports of the Canadian Dental Association were, on the whole, excellent. As usually happens, a few errors crept in, and some reports were overdone. One reporter makes the remark that after spending a day with his dentist, he thinks this research, or as he puts it, search business, is now overdone.

⁂

The Chicago College of Dental Surgery has passed out of the hands of the Valparaiso University, and has been taken over and controlled by Dr. Trueman, W. Brophy, C. N. Johnson, and Dr. W. L. Logan. Dr. Logan will assume the active office of dean. The profession of Chicago, and especially the alumni, will be gratified with this change.

⁂

For six weeks three ambulances, two motor lorries, a moving picture lorry, three medical specialists, two dentists and six public health nurses had been touring Nova Scotia. As a result of this successful experiment it was expected the caravans would be put in operation in all the provinces. The ambulances were fully equipped for all kinds of operations.

FOR SALE—Ritter suspension type engine, used two years, good as new, 110 volt alternating current. $125.00. Dr. Lindley, Lloydminster, Sask.

Dominion Dental Journal

Vol. XXXII. TORONTO, OCTOBER 15, 1920. No. 10.

Original Communications

A TOOTH ROOT IN THE LUNG

A. E. Webster, M.D., D.D.S., Toronto.

On October 6th, 1920, in Hamilton was tried before Justice Meredith, one of those unfortunate cases that now and then come before the courts as dentistry comes more and more in the public eye.

In short, a patient who consulted Dr. George Everett, exodontist, in Hamilton, in December, 1918, claimed damages amounting to $10,000 for alleged malpractice. It was claimed that during the extraction of the teeth, or subsequently, the dentist permitted a part of a tooth to get into the air passages of the patient and caused certain untoward symptoms. The case was tried before a jury and thrown out.

The plaintiff said that he had been advised to have all his teeth removed because he was suffering from sciatica; he consulted a dentist in Dundas, who undertook to remove the teeth, using a local anaesthetic to quiet the pain; several teeth were removed at the first sitting when the patient showed symptoms of depression from the anaesthetic; another trial was made at a later time when a few more teeth were removed, the patient showing similar symptoms of a more grave character. At this time, the dentist decided that local anaesthesia was not satisfactory for this particular patient, and besides this, the teeth were so difficult to remove that he thought it better to send him to a specialist in Hamilton, with whom he made arrangements for the operation to take place on a Saturday afternoon at 1.30. The patient arrived between four and five o'clock, and was given nitrous oxide and oxygen for continuous anaesthesia while nineteen teeth were extracted with great difficulty, because the patient was not a good subject for gas anaesthesia and the teeth were very difficult to extract, seven or eight of them breaking in several pieces during the operation.

The patient struggled and slipped down in the chair and had to be raised up while yet under the anaesthetic. The gas administration and packing of the posterior part of the mouth were carried out in the regular way. Both Dr. Everett and his assistants described fully the details of the operation—the patient recovering from the anaesthetic quite normally, and went home feeling quite well and with no symptoms of distress.

He claimed that by the next morning he had fits of coughing, which came on spasmodically every now and then, gradually getting worse as time went on. On the following Monday he consulted the dentist in Dundas, and asked him if it would be all right for him to remove a couple of stitches which Dr. Everett had placed in the gums at the Saturday operation; with the concurrence of Dr. Everett over the telephone, this was agreed to. From that time until the day of the trial, almost two years afterwards, Dr. Everett had not seen the patient.

As the coughing became distressing, the patient consulted his family physician, who believed that he was suffering from some nervous condition which could be relieved by sedatives, but, after several weeks of this treatment there was no result, gradually losing in health, strength and weight. He was then sent to a nose and throat specialist in Hamilton, who, hearing the history, asked that an X-ray be taken. The X-ray plate showed something that was radiopaque about the size of a tooth, but no one could say what it was. At the hospital a careful examination was made under general anaesthesia, but no foreign substance was discovered. The conclusion was that a calcified gland or a bony spur made the shadow. The patient got gradually worse, the coughing more violent, and the distress greater. A good deal of what the physicians called pus was coughed up, and at times some blood. In May, 1919, during a violent fit of coughing, a tooth root was expelled in the presence of a neighbor who happened to be visiting the sick man. Following this the attacks of coughing became less frequent but accompanied with rather severe hemorrhages and copious discharges of what was called pus. These hemorrhages have become less frequent and less copious, until at the present time they occur about once every two or three weeks, and are only streaks of blood in mucus.

Since the patient did not promptly recover from his symptoms after coughing up the tooth, another X-ray of his thorax was made, and to the surprise of some the same foreign body or shadow appeared in this plate that appeared in the first. The judge was very anxious, as well as others, to know why the tooth did not show in the first plate, and what it is that still shows in the second plate? And if a foreign substance showed in the X-ray plate of the lung, why it could not be seen on physical examination? Answers to these questions were attempted, but on the whole were not very satisfactory. None of the witnesses called by the plaintiff would say that perhaps the tooth had not been in the lung at all or that there is not now a foreign substance there.

As far as the evidence went, as presented by the plaintiff himself, a tooth had been allowed to get into the air-passage during the extraction, and that because he had suffered much pain, loss of health, and time from work, he was entitled to compensation from the person who extracted his teeth. On the other hand, none of the plaintiff's witnesses even suggested that there had been the slightest neglect or lack of skill or care on the part of the defendant.

The defence rested its case on a detailed description of the operation, laying special emphasis on the procedures followed to prevent a foreign substance getting into the throat. The throat was carefully packed with gauze while under the anaesthetic. Two expert witnesses were called, who said the procedure described was the recognized method of practice, and that nothing more could be done to prevent a tooth from getting into the throat. Under cross-examination, it was admitted that even in the presence of the packing of the throat it was quite possible, under certain nervous reflex action, for the throat to be opened even wider than the packing closed, and at that time a sudden inspiration occur which might inhale a foreign substance.

The defence held the view that it was quite possible that the tooth root in question did enter the patient's lung, but since the defendant had exercised all the precautions known, he was not liable. The plaintiff tried to show that the teeth, being difficult to extract, only one should have been attempted at a time, and that since the patient struggled, it would have been wiser to have stopped operating and given the anaesthetic again some other time. It was also held that the teeth and roots should have been counted as they were extracted, and when one was lost the operation should have been stopped to find where it went. The answer to these contentions was that the chief danger from such operations is in the anaesthetic, and that more risk is taken in a second administration than in a continuation, because it is not evidence of suffering or of danger to life if a patient struggles under an anaesthetic. It has been found impracticable to keep track of the teeth and roots extracted, because they often break into many pieces, and all teeth have not the same number of roots. three roots commonly found on an upper third molar might be accounted for and a fourth or a fifth root go down the patient's throat. Besides, for fifty teeth or more that go down the throat, one goes into the air-passages. So, in the absence of symptoms, the allowing of a.tooth to get into the throat does not mean that any action is advisable.

The jury in its wisdom said that Dr. Everett was not responsible, because he did everything known to science to prevent the accident.

DISEASES OF THE TEETH ARE PREVENTABLE—DENTISTS NOT RESPONSIBLE FOR CAUSE NOR THE PREVENTION

A. E. Webster, M.D., D.D.S., Toronto, Canada.

Read before the District of Columbia Dental Society,
Washington, D.C., April 1, 1920.

It has often been stated that less than twenty per cent. of the people of this continent get any kind of adequate dental attention. If this be true, and there is little reason to doubt it, there will surely be a day of reckoning. Through the legislatures the people have made prohibitory dental laws and in a sense dentistry has taken the responsibility of supplying dental services to all. If this service is supplied to only the well-to-do and eighty per cent. of the people must go without any, let us not complain if the man in the street dislikes governments and places dentists among the privileged classes. Sooner or later all the people will receive dental services, whether by private dentists or by those employed by the State hygienists or dental quacks. All the people must get equally of the essential things of life or democracy is a mockery.

That we may better understand the present and see more clearly what the future has in store, let us study the past. In Europe, as a general thing, dentistry is practiced as a specialty of medicine. There is no law on the statute books prohibiting any person from practicing any of the professions, so long as they who practice do not hold themselves out as being qualified by law and entitled to call themselves physicians, lawyers, or dentists. From this one would think that the dentist was in the same relative position as the physician, but under the public health act in most countries no one but a qualified physician can administer an anesthetic, report contagious diseases, give death certificates, or hold public positions under the act. while there is nothing the unqualified dentist may not do, except call himself a dentist, or the qualified can do that nobody else can do.

When the Dental Act of Great Britain was passed in 1878, every one who had anything to do with dentistry was given a license. It was expected the people would be properly served, which was perhaps true for a few years. Ever since then there has been a gradual increasing demand for dental services and even a decrease in the number of dentists. The qualifications were so high, the cost of an education so great, the rewards so small and the unqualified so successful, that there were few young men to enter the profession. The public would have service, hence the wonderful increase of the unqualified dentists in England. There is said to be two or three times as many unqualified as qualified. The conditions in Great Britain are typical of other countries in Europe.

On this continent dentistry separated from medicine and obtained its own legislative authority and established its own relations to the State. As in Europe, there has been a marked increase in the demand for dental services. There are enough qualified dentists to serve perhaps, twenty per cent. of the people. The balance are demanding it. What is to be done? The situation will be met as in Europe unless the profession itself does something. The public is long-suffering. It will tolerate a grievance for a long time, and then rise up and destroy many good things before justice is reached. It is a wise counsellor who sees an injustice and corrects it before justice is forced by the populace.

MEANS BY WHICH A GREATER NUMBER COULD RECEIVE DENTAL SERVICES.

There are many ways by which a greater number of people could receive dental attention.

1. Increase the number of dentists. In the minds of even some noted dentists and legislators this is the only solution.

2. Increase the productiveness of dentists by better equipment, trained assistants, nurses, hygienists and prosthodontists.

3. Make a more equal distribution of the dentists now licensed.

4. Reduce the cost in both money and time.

5. Supply a less troublesome and painful variety of dentistry to the people.

6. Disseminate a knowledge of the value of dentistry throughout the land.

7. Change the whole method of practice and treatment and thereby decrease the need.

It is quite clear that if all the people wanted dental service of the kind that is now being practiced, there would need to be a great many more dentists. If dentistry is going to build large contour fillings, devitalize dental pulps, remove them and fill canals, as well as treat infected and diseased teeth, and make splints, crowns, bridges and clasp dentures, and correct irregularities, it is hopeless. Such operations demand the highest skill, medical, surgical, engineering, artistic and mechanical. Very few people can afford the time or money for such service and the State would need billions to supply a national dental service of the kind now practiced and advocated by the leaders in dentistry. The situation, educationally and legislatively, would seem as if dentists were being educated so that they could make a living out of the people who have money, permitting the balance to go hang. The "Lord helps those who help themselves."

Another way to meet the situation would be to increase the productiveness of the present members of the profession. A few have already caught the idea, but the majority go on in the same old way, proudly doing all their own work from charwoman to polishing dentures. The advertising dentist has learned efficient factory methods to his own personal gain, but not always to the advantage of his clientele. There is no reason why an efficient well-educated dentist should spend his time making appointments, keeping books, sterilizing instruments, soldering crowns, or pumping a foot engine. These and other things can be done better by less expensive labor. A real dentist should be thinking of the etiology, symptoms and diagnosis of his patients' troubles, leaving to others that which takes less training and skill.

INCREASING PRODUCTIVENESS.

There are many factors which enter into the productiveness of a dentist, some personal and others business. Efficiency or factory methods, if you please, must be employed. The arrangement and general equipment of the office help wonderfully. Assistants or clerks, as well as trained dental nurses, have in many offices increased the output fifty per cent. The hygienist is the result of a demand and whenever directed by a competent dentist, who allows her to do only that which she has skill in, will increase the number of people cared for. The dental mechanic is in the same class and should be trained in the same manner as the hygienist and dental nurse.

The more people a given dentist can serve by gathering around him others of less expensive training, the fewer dentists will be required and the less the cost should be to the individual. Unfortunately, or fortunately, according to the viewpoint, the latter does not always occur.

The unequal distribution of dentists throughout the country is a cause of a lack of efficiency. There are towns of less than fifteen hundred people with three and four dentists, while there are others of the same population without one. Dental societies, State boards, or the State itself, might well exercise some jurisdiction in this matter.

DENTISTRY TOO EXPENSIVE FOR THE MASSES.

The cost of dentistry is a reason for not having it done. If there were enough dentists to do all that is required at the present time, the half of the people could not afford it nor could the State afford to pay for it according to our present methods. The practice of dentistry has been a personal and private relation between the dentist and his patient and on this account expensive. If organized as before indicated, the cost is reduced. Following his experience in the Army, an English army officer of renown said he could fill all the teeth of the poor of England, which did not need devitalization, from the profits made out of making vulcanite dentures for the edentulous at a guinea a piece. Instead of dentistry becoming cheaper, it is becoming more expensive and the more expensive it becomes, the fewer can have it. A dental education now takes four of the best years of a young man's life and at least as many thousands of dollars. In 1921 it will take five years and in 1926, six years. If such graduates do not serve more people than the present ones, the cost will be increased by one-third and the final result will be fewer dentists, unless the New Zealand plan is followed where the State is lending money to indigent young men of ability and allowing them to repay it in service in sparsely settled districts, or State institutions for the poor. In some practices there is a total disregard of the patient's time, who often spends an hour or perhaps two hours to get fifteen minutes of a dentist's time when there are hours of work to be done for him.

If dentistry must wait until the teeth are all defectively and irregularly erupted, decayed and diseased before her services are employed, as is the case to-day, its practice cannot be otherwise than troublesome, disturbing, painful, and expensive. These factors are reasons for neglect among thousands of people who know better, but procrastinate in the hope that they may never need it. Our present methods demand discomfort, pain, money, and time—often far beyond the value of the service. Many people choose to go toothless in preference to visiting a dentist.

If everybody knew the value of dentistry, there would be a more insistent demand for it. The more widely it is known, the greater the number would demand it. Very few people have any idea what a dentist can do, outside of extract teeth and make dentures. It is true some have heard of crowns and bridges, but few know how to judge of the kind of services they are getting. They know "it hurts a lot and costs a lot."

NECESSITY OF PUBLIC DENTAL EDUCATION.

Every dental society and every dental organization since its inception has recognized the need of public dental education and has appointed committee after committee these fifty years to prepare articles for the press and for general distribution, with the result that now and then something is done, but without any continuous or persistent policy being followed. Sporadic advertising is useless and so is sporadic dental education of the public. The private dentist who has all he can do, sees no reason why he should spend his time and money in public education.

If less talk had been indulged in and more action taken among our general education authorities, results would have been better. Dentists do not know how to write articles on dentistry for the public to read, nor have they any right to pay anybody else. It is a question of public health and public education.

The advertising dentists of this continent met and called themselves the modern dentists, because by them alone the public is educated. It is through their advertisements, pamphlets and private letters that a large part of the public gets any knowledge they have of dentistry. The newspapers are paid large sums of money for dental advertising, and are therefore not likely to print anything which will interfere with their business. The advertising of such dentists is continuous, at tractive and follows a definite policy and is therefore successful. Such propaganda should be done by a propagandist employed by the State, as in tuberculosis and venereal disease.

Having discussed at some length the position of dental practice as it is to-day with suggestions for improving its scope and usefulness and indicating its hopelessness if the present methods of practice are to be followed, let us now consider if there is not a ray of hope along another line. We have made false pulps for teeth, ferrules for crowns and filth collectors for missing teeth, planted roots of teeth in the jaws, as well as bird cages, and attached whole dentures to single teeth with as little appreciation of the physiology, hygiene and engineering involved as might be exhibited by an untrained Indian.

A great deal of dentistry practiced would be better left undone, and not a few people have reached early graves because of over-enthusiasm in mechanical procedures. The great majority of dental researches have tended to destroy faith in our methods of practice and few have led us to prevent disease. Our postgraduate courses are all on treatment, little on prevention. Dental practice is empirical and mechanical. Though the theory of dental caries is known, there is no considerable dental practice based on it. Very few dentists attempt to prevent decay in any different way from that practiced in the days of Miller's youth. The discovery of the dental plaque by Williams and Black has had little effect on practice. The work of Pickerill, Sim Wallace, Colyer and Bellanby is unknown to dentistry, not to mention influencing its practice.

Dental researches have discovered a great variety of methods of restoring lost parts of the human denture and but few successful methods of preventing the parts from being lost. Most of the researches of the past few years have been on drugs, root-canal treatment, and partial dentures—all unnecessary.

The writer knows full well that he lays himself open to criticism when he makes such statements as the foregoing before such a body as this, but it must be kept in mind that the members of the profession who attend meetings of this kind and read dental literature are in the minority. It is not intended to be like the scoldings the preachers give those present, which are intended for the absent.

As a general statement only those have public influence in any department of knowledge whom the public accept as authorities. Neither the court nor the public accept Henry Ford as an authority on world or national politics, but they do accept him as an authority on motor cars.

If the public believe dentistry consists in extracting teeth and making dentures, then dentists are accepted as authorities in these subjects, but as soon as they begin to express opinions on diet, rheumatism and anemia, they make themselves ridiculous in the eyes of the public. The physician is supposed to know all about diet, rheumatism and anemia, and his opinion will be taken in preference to the dentist's, no matter how much he knows. This is just what happened in the matter of focal infection. Dentists knew for years before Hunter's supposed revelations that diseases of the teeth were intimately associated with general diseases. Hunter's conversion was not without much contentious work and demonstration by his dental friends. But once persuaded he told his medical friends. They believed in him and the fact was accepted. For many years British physicians and dentists were studying and co-operating in the treatment of rheumatism, anemia and heart lesions before it spread to America, though American dentists knew all about it. They were powerless to persuade either the physician or the public.

William Hunter brought the message to America through an address before the medical students of McGill University, Montreal. His remarks commanded the attention of the medical profession and through it the public and the balance of the dental profession. To-day the study and discoveries relating to teeth and health in America have far surpassed anything done in Europe.

DIET AND THE TEETH.

The studious and observing dentists of to-day are as firmly convinced that there is some relation between diet and defective teeth, diet and decay, mastication and dental caries, oral hygiene and general diseases, as they were twenty years ago on the matter of focal infection, but are unable to get the attention of the public.

It is almost twenty years since Sim Wallace directed the attention of the profession to the relation between sugars and starches and decay of the teeth. It is fully fifteen years since he proved this relationship on a squad of pupils in a boys' school. It is more than ten years since Pickerill discovered that the character of the enamel of the highly civilized peoples is more likely to be defective than the uncivilized. It is many years since it was known that faulty diet caused rickets.

It has long been known that privations in certain articles of diet caused certain diseases. In a recent article by Mrs. Bellanby on the dietetic influence on the development of the teeth and jaws, it is shown that defects of the structure and arrangement of the teeth are as much under the control of the dietitian as bodily growth itself. Teeth can be developed defective, or sound, regular, or irregular at the will of the dietitian. More than this, teeth though sound can be decayed or though defective can be prevented from decay at the will of the dietitian and the dentist. Oral hygiene, as the dentist understands it, reduces the incidence of percentage of the acute infectious diseases and many of the chronic. Oral prophylaxis does more than help to prevent decay of the teeth and diseases of the peridental membrane—it prevents general diseases. It often takes the place of hard diet and proper mastication.

Mrs. Bellanby, in closing her remarks on diet and dentition said, "I have endeavored to supply you with evidence that the origin of many of our dental defects is possibly largely dietetic and that the factor at fault is very definite in its action. A writer in the 'Lancet' says, 'Experience has taught me that there is no royal road to the prevention of dental caries. To believe that our nation will alter its diet to save its teeth is chimerical.' This is a sad forecast and I hope an untrue one."

"If my work and its application to human beings is correct, one important cause of unsound teeth and poor growth of the jaws is very well defined and the remedy obvious. With definite knowledge, definite instructions can be given and acted upon." The result of acting upon such instruction is that the diet will remain a normal one, and the time when this feeding is important from the point of view under discussion is the period of parental responsibility.

If these things are known, and a large number of the dental profession are persuaded of it, why do dentists as a body direct their whole attention to reparative processes and so little to the methods of prevention indicated above? In extenuation, one might say the whole principle or foundation of the healing art is based upon the cure of disease, not its prevention. Prevention is rather a modern idea. Besides this, the people with diseased teeth are suffering and must be attended to.

As previously exemplified, it is impossible for the dental profession to reach the public on matters of diet hygiene and public health. It can only be done through the proper channels. Dentistry only makes itself ridiculous when it goes before the people as an authority on the diet of pregnant women and infant feeding. Physiologists, physiological chemists, dietitians must first be shown the value of our contentions, and soon the whole body of the medical profession will be in full consent, then State action will follow.

Sim Wallace, in a recent book, gives color to the foregoing by directing attention to the fact that little is known about the physiology of mastication, insalivation, and deglutition. The writer asked a noted physiologist and an author of a textbook for dental students how much time he gave to the subject of the physiology of the mouth in his course to medical and science students, and he replied "about eight minutes." Mrs. Bellanby, a physiologist, in reply to Sim Wallace, said, "The fact is that physiologists when they have thought about the matters at all have generally assumed that dentists knew everything there is to be known about the teeth, and when touching this subject they have been the gramophones of the dental profession."

SUGARS AND STARCHES AS CAUSES OF DENTAL CARIES.

A great number of practicing dentists are convinced that sugars and starches are in some way associated with dental caries. National dental decay is in proportion to the quantity of sugar consumed. Notwithstanding the teachings and practice of dentistry (which one must admit is without breadth) decay of the teeth is on the increase in civilized countries. The public has accepted prophylaxis, dental fillings, the toothbrush, toothpastes and toothpowder as the dentist's prescription for the prevention of dental caries. Everybody knows it is a failure. Such methods are of great value, but are doomed to failure because they do not, nor cannot, reach all the people, and are impotent to offset the influence of defects, faulty diet, and methods of mastication established before the dentist is consulted. So long as the national diet is sugar, corn and wheat starches, rice, chocolate and meat extracts, vegetable oils, ice cream and candy, there will be national dental caries. This will continue to be the diet while the cook books, the daily recipes, the dietaries, the menus of domestic science schools, hospitals, schools, hotels, dietitians and physicians prescribe such food as a part of every dish. So far as national health is concerned, the "tuck" shop, the candy store, the ice cream parlor and the afternoon tea are in the same class as the brewery, the liquor store and the saloon. The greatest service dentistry could do the nation is to get the ear of a noted physiologist, dietitian or physician. The factors of personal and public health are diet to prevent defects of the teeth and jaws, diet, prophylaxis and dental fillings to prevent decay and diseases of the peridental membrane. Pulp treatment and root-canal filling may be classed as preventive measures, but crowns, bridges and dentures are strictly restorations.

If the teeth of the nation are to be saved from decay and many of the ailments prevented which result from diseases of the teeth, there must be a popularization of the knowledge of the effects of diet on the structure of the teeth in their development and causes of decay. This can only be done through the proper authorities in physiology, physiological chemistry, pathology and general medicine. When it comes to the part played by prophylaxists and repair dentists, they are qualified to educate the public. Dentists must improve their methods of organization for both private and public service so that more people may be reached.

The teachings of proper diet reach all classes and are nation-wide in their scope, while the teaching of prophylaxis and repair are limited to the well-to-do.– Dental Cosmos.

EFFICIENCY IN DENTAL NURSING

Mrs. Christine H. Schumacher, New York, N.Y.

Read before the Postgraduate Clinic of the District of Columbia Dental Society, Washington, D.C., March 31, 1920.

From my experience as nurse and assistant to a dentist, I will enumerate the routine of duties absolutely necessary for cleanliness and efficient results in an up-to-the-minute dental office. By this means the assistant becomes an extra pair of hands to aid the operator, and a valuable asset and necessity to her employer.

CARE OF INSTRUMENTS AND APPLIANCES.

As the average dentist's hours are from 9 a.m. to 5 p.m., it is essential for the nurse to be on duty at 8.30 a.m., in order to see that sterilizers are ready for use, electricity turned on at the switchboard, spray bottles filled, alcohol lamps refilled, all water connections turned on, wax heater ready for use, and cabinets filled with linen for the day's work, so that replenishing of supplies during the day will not be necessary.

Dust is matter out of place; examine the office and see that none has been overlooked by the janitor or maid. Be sure to oil electric motors and engine parts; wipe all parts free from excess oil; do not forget the oiling of the compressed air pump, for it is important to keep the machinery in good condition.

If all machinery be examined thoroughly by an expert every three months, and a close inspection made during the summer season, then kept in good condition by careful daily attention of the assistant, the operator will not be handicapped by breakdowns at most inopportune times. Smooth-running engines and true handpieces are an aid to good dentistry.

X-ray machines require special attention monthly by an expert to obviate serious trouble.

In developing radiographs, perfect your technique in detail; if necessary, consult experts to prevent spoiling properly exposed pictures. Keep the radiograph file in an orderly manner.

All scissors and shears must be kept sharp, to have good cutting edges.

Dental chairs should be thoroughly overhauled by the manufacturers and recaned. The foot controller, switches and motors should be examined by a mechanic from the dental supply company at least once a year. All handpieces examined by experts and repaired, to be in proper working order.

Have the dentist purchase a good, strong magnifying glass, high magnification, and have him use it to examine the burs that have been used for only one operation—and he will think twice before he will use them again.

Classification of instruments in small units for special classes of operations will be of great assistance to the operator.

THE DAILY ROUTINE.

Sort the morning mail, leaving only the personal letters for the doctor's attention. All others the assistant can answer, as she is familiar with the details.

Watch the thermometer, and keep a circulation of fresh air in the rooms.

After the patient arrives, and has removed her wraps, place her in the dental chair, adjusting the chair to a comfortable position. Protect the patient's clothing with a linen towel, fastened with a metal chain fastener. Then from the glass cabinet, place a sterile water glass in the glass holder while the patient is in the chair, add a mouthwash to suit patient's mouth conditions, and have a supply of hot water at hand.

If you are familiar with the prospective operation to be performed, before each sitting prepare the necessary implements by sterilizing before placing them in small sterile trays on the table tray. If the preparation is for surgical work, or root-canal work, special sterilizing will be necessary during operation.

At the end of the appointment, when the operating room is to be prepared for the next patient, remove the linen headrest cover, and replace with a clean one. Wash the bracket table with a ten per cent. solution of alcohol before replacing the sterile enamel tray on the bracket table, and place a glass tray on the cabinet for soiled instruments used during the operation. Clean the cuspidor thoroughly after every patient. Brush the floor clean of any particles that may have collected. The nurse should scrub her hands with surgical soap and alcohol before the operation, and before handling linen.

Have a sterile hand towel ready on the sterile rack for the doctor, so that he does not have to open the cabinet door. All this makes for proper asepsis, and is a saving of time in the course of the day's work.

While one assistant is cleaning up the office, the operator can be busy in the next office with the next patient, with the other nurse in attendance. By this means no time is lost waiting for the office to be cleaned. When possible, the patient should be surgically prepared by means of oral prophylaxis to afford a sterile field for operation.

When the doctor is called on the telephone, take the message. In ninety-nine per cent. of the cases, the assistant can give the desired information. This rule also holds good when people call in person. Inquire if the visit is professional. If the caller informs you that it is a personal matter, ask his name, and if he refuses to give his name, or state his business, you may treat him accordingly, as he is probably an agent of some kind, or a beggar.

If necessary to inform the doctor, while he is operating, of a call, either personal or by telephone, write the message on a pad provided for such purpose, and do not impart your information to the patient in the chair.

When informing the doctor of the arrival of a patient, do not mention the name in the presence of the patient in the chair. Write the patient's name and time of arrival in the day book, and at the back of the chair show it to the doctor.

Use judgment in keeping patients from waiting, if possible. Thereby many moments may be saved in the course of the day.

EXAMINATIONS.

When the patient arrives for the first visit, an examination is made by the doctor, and recorded on the examination chart. Impressions are taken of the upper and lower jaws, and X-rays made of the entire upper and lower jaws.

If the doctor can give the assistant some idea of the extent of the work to be performed, the nurse can then make a series of appointments, six to ten, in advance. This will avoid the making of appointments after each sitting, and the patient is benefited by securing the hours and days preferred.

APPOINTMENTS.

When making appointments always insist on giving appointment cards. For all appointments made over the telephone, mail appointment cards to avoid mistakes, and it is a good plan to have appointment cards confirmed in the appointment book by your other nurse. It is most embarrassing to have a patient appear at a time specified on the card, and find your entry in the appointment book is wrong. Also, it is a source of satisfaction, if the card and appointment book are found to be correct, to find it is the patient who made the mistake, and not yourself!

Keep a call list, and if a patient cancels an appointment, refer to the call list for filling in the time. By this means waste of time can generally be eliminated.

Try to remember the most convenient time for appointments for each patient. It is irritating to a patient to offer her a nine o'clock appointment, when she has previously told you she cannot keep an appointment before 11 a.m.

Business men, as a rule, desire morning appointments, or late in the afternoon, and cannot break into the busy part of the day.

Children's school hours must be considered, and appointments made to accommodate their time as much as possible. by giving them late afternoon hours and Saturday mornings.

Use only pencil for writing in the appointment book,. as many changes are made in a week, and unless you are able to erase the notes. you will have a "messy-looking" book. At the end of the day, have a few moments' consultation with the doctor, especially in writing up the day's work. You may remember some detail the doctor .forgot to enter, and by this means all charges will be entered.

KEEPING RECORDS.

Enter the name of every person who calls; also the telephone calls received, in the day book. This is most important, as it is a double check on the appointment book, and in checking up the day's work, a reminder of persons operated upon and fee to be charged.

Keep the day book posted to date, and send statements to all patients the first of every month. In case of misunderstanding, it is better to rectify or explain at the end of a month's service than at the expiration of six months.

Deposit checks and cash as soon after receiving them as possible, and permit a lapse of forty-eight hours after depositing before sending out receipts.

My employer has been in the habit of having an expert accountant audit the books once a month. This is a great comfort for all concerned, and at the end of the year, an easy method of calculating the income tax.

At different periods check up the last appointment of patients and send notification cards to those whose time has elapsed for prophylactic treatment, and also delinquents due for examination, and general periodical visits.

Orthodontia cases should be notified, monthly prophylactic treatments given, and appliances removed so the oral hygienist can thoroughly clean the teeth and bands.

This all comes under the daily duties of the nurse in charge, and if she is capable, she will attend to these things without being reminded by the doctor.

STERILIZING.

The possibility of the transmission of disease from one person to another, dentist or patient, through unclean instruments and appliances has long been recognized, and we cannot put too much stress on the necessity of thorough cleanliness and sterilization.

When a tray of soiled instruments is brought into the sterilizing room, the instruments are sorted and cement instruments are scraped clean of cement before being put into water. This pertains to steel, and will avoid oxidation. Then the instruments are scrubbed with a good cleanser, such as "Bon Ami" or "Orono," followed with soft soap and carbolic acid.

When the instruments are free from all deposits, mechanically clean and sterilize them by boiling twenty minutes, or in questionable cases thirty minutes. At the expiration of this time, the instruments are removed from the sterilizer and wiped dry while hot with a sterilized towel, and lastly wiped with alcohol. They are then placed in a dry formaldehyd sterilizer until the end of the day, if the dentist has enough duplicates to permit this, and then replaced in their respective places in the cabinets. Sterilize instruments, napkins, dressings and towels in Autoclave. Having a place for every instrument, and every instrument in its place, is a standard of good management. Try to keep it so.

Keep up appearances by cleanliness, and thereby make a lasting impression on patients. It is said that butterflies and humming birds fly to the sunniest and most attractive gardens; try making your garden attractive to humans.

Great care should be exercised in the care of linen. Be careful not to spill acids, iodin or any medicament on them. No laundress can be expected to remove such stains without injuring the linen, and there is nothing more unsightly than pure white linen marred by stains or holes.

A common fault with many is to take a spotless white towel or napkin, or a linen headrest cover, and dust the furniture with it. Standardization in the office applies the same as in the home. Have clean dusters for dusting, cleaning cloths for wiping instruments, towels for the hands, and special towels to cover the patient's garments, and use each article only for what it is intended.

During special extensive operations, use good lightweight rubber aprons under the linen towel.

The care of linen is a distinct part of the daily routine, and by using separate containers, and the paper bag for waste, I find stains can be entirely avoided, if care be exercised.

THE SYSTEMATIC ARRANGEMENT OF INSTRUMENTS.

Have one cabinet for all instruments and requisites for amputations, or extractions and anesthesia. In another cabinet place all instruments required for orthodontia; and then in another cabinet all instruments for general practice.

Keep cements of all kinds in their respective places with spatulas and varnishes.

If you have two or more offices, have some plan of marking and arranging the instruments, so that you can distinguish which are to be used for Office 1, Office 2, etc. By this method time will be saved, and confusion eliminated in replacing sterile instruments in their respective places.

Keep all cotton, cotton rolls, cottonoid, gauze, swabs, cotton applicators, etc., in glass-covered jars, and glass dishes suitable to the sizes contained therein.

Saliva ejectors should be immersed in a glass-covered jar in a solution of distilled water and alcohol.

All cabinets should be thoroughly cleaned every four weeks, as the fine dust will work in, no matter how careful one may be in keeping the doors closed.

Have all nickel bright and polished, and a systematic cleaning of all nickel done thoroughly by the office man once a week with polish. During the week, just a dry wipe will keep it clean. Many offices contain "sterilizers" covered with filth and debris, that are a mockery of the word.

This precaution also pertains to the switchboard; all attachments and connections should be taken from the cabinet, sterile, when ready to use. Do not leave attachments hanging exposed from day to day, and used on patient after patient.

When the day's work is done, turn off all electricity, water and gas.

PERSONAL APPEARANCE OF NURSE OR ASSISTANT.

The assistant should be dressed in a white gown, and I wish to emphasize the necessity of keeping the gown white. To-day the uniforms are furnished by the doctor for the nurses, and not having paid for them, some nurses find it unnecessary to keep them in repair, and do not seem to consider the expense.

It is to the nurse's credit to be neat and clean in dress and person. It is very essential to be properly shampooed, and patients expect the same degree of cleanliness in the doctor's attendants as prevails in the general atmosphere and surroundings, and these, of course, should always be immaculate.

The nails should be carefully manicured, as unclean hands are especially repulsive to the patient.

Avoid wearing jewelry, except only the simplest when necessary. Do not wear a skirt so short that it detracts from the dignity of the uniform.

A common and objectionable habit of some nurses is to primp and fluff the hair, and adjust hair pins while in the operating room. If necessary, leave the room for such toilet duties, and cleanse your hands thoroughly before returning.

USEFUL HINTS AND SUGGESTIONS.

Do not converse with the patient unless it is on necessary business. Patients are not interested in your ailments, or family affairs, although they may be polite enough to listen to you. The patient's time is valuable, and so is yours; and if you perform your duties, there will be little time left for conversation, or magazine or book reading, or for embroidering and knitting.

Do not give telephone messages to house servants unless instructed to do so by the patient, as they are not responsible if the message is not delivered.

Dental nurses of to-day can fit themselves for many duties, and by applying themselves diligently can become proficient assistants in the laboratory for such work as plaster model making, casting, bridge work and porcelain work.

Study the idiosyncrasies of the patients. Try to remember their likes and dislikes. Some object to the saliva ejector, and after once speaking of a dislike, do not err by repeating the mistake at the next sitting. Some people have an aversion to the use of cotton, others to bibulous paper, linen, or rubber dam.

Study the supply catalogue and familiarize yourself with the dental instruments. I have known assistants after six years' experience in an office not to know a hatchet from a hoe excavator, or ball burnishers from flat burnishers. This discrimination of instruments is very essential. If you do not know the difference, you are unable to place proper instruments in the correct places. Standardization in arrangement cannot be practical unless you know every instrument and its use. By careful study, you will quickly learn the relation and position for each placement.

During the summer season, I find it good practice to prepare for the busy season by preparing supplies, making swabs, and sponges, applicators, cutting of base plate gutta-percha, Detroit wafers for impression cups, and any cleaning and rearranging of supply closets; filing of yearly magazines and preparing as many supplies as possible, to be ready for the busy season. Then it is a great comfort to replenish from the supply closet, and it eliminates ordering and buying when your time is taken up by more important duties.

There is always a class of patients who need to be educated, and a competent assistant will be a great asset in making explanations to patients when necessary, and the practice of the operator can thus be benefited to a great extent.

I wish to call attention to the nurse's attitude toward the operator. Jokes and side remarks are out of place in the operating room. Strict attention to business and respect to the operator and patient at all times is a mark of efficiency in conjunction with your knowledge of the work in general.

In closing I wish to state, that a dentist can no more dispense with the dental nurse or assistant, than an up-to-date business man can do a one-man business and do it well. It cannot be done. Go into an office where a man is without the assistance of one or more dental nurses, and you will at once notice that his office equipment and surroundings show neglect. Furthermore, aside from cleanliness, there are many times when the practitioner is handicapped in performing the simplest operation without the aid of an additional pair of hands.

Do not confuse the term "dental nurse" as I have used it, with the use of the term as applied to the oral prophylaxist. Many dentists call the dental hygienist a dental nurse, but I am referring only to the duties of the office assistant, who does no work in the patient's mouth whatsoever; but merely makes for greater efficiency in the dental office by assuming the responsibility of the many little details which can be so well performed by a woman of intelligence and tact, leaving the dentist free to do the important operative procedures. Such a woman makes herself invaluable to her employer.

We have been told that there are not enough dentists to serve even a small percentage of the people who require their services. If, therefore, the dental nurses leave more time for the dentists to perform actual operative work, by relieving their employers of the many little things in a busy practice which can just as well be attended to by intelligent assistants, I feel that they may be considered in the light of true benefactors to humanity.

I hope in the near future, to see established a school for training such dental nurses or assistants. Such an institution would be of great benefit to the profession. The time will come when a graduate dental nurse will be in as great demand, if not greater, than the medical nurse of to-day. Financial returns worth while will encourage the young women of to-day to enter this field.

ORAL SYPHILIS

Herman Goodman, B.S., M.D., New York, N.Y.

HISTORY.

The question of the antiquity of syphilis, as we know the disease since 1492, is a moot one. Whether, as has been claimed, syphilis was unknown to the Europeans prior to the return of Columbus from the New World, or whether the end of the fifteenth and the beginning of the sixteenth centuries marked a pandemic of the disease, which had long existed among the people of Europe, is difficult to decide. The evidence is slightly in favor of the importation into Europe of the disease by the sailors of Columbus who had been infected on their trips to America, probably on the first trip to Hispanola or Haiti. It is interesting in this connection to note that the original Caribs, the Indian inhabitants of the islands of the Caribbean Sea and its mainland boundaries, were characterized by very poor upper central incisors. This character is still marked in the present descendants living in the Antilles.

Certain it is that the armies of Charles VIII carried syphilis into the remotest parts of Europe, and the savants of the period acclaimed it a new disease and presented it with as many names as there were observers. Fracastoro (1484-1553) has the distinction of naming the disease from the swineherd hero of his poem, which was the earliest popular work on the disease.

The first instance on record, according to Josso, of a syphilitic lesion of the mouth dates back to 1560, when Botal observed a syphilitic chancre of the mouth. About the same time, Brassavola called attention to the syphilitic chancres met with in children, which had been given to them by their nurses. From that time on, Ambrose Pare, Fallope, and others all observed the buccal chancre.

According to Bulkley, the earliest recorded cases of transmission of syphilis in dental operations were in connection with the transplantation of teeth during the last quarter of the eighteenth century. "John Hunter (1786), in whose time the operation of transplantation seems to have been extensively performed, was forced to admit the transmission of syphilis in two out of seven cases. He also readily admitted the possibility of such inoculation through other dental operations. J. C. Lettson in the same year reports a number of cases which came to his notice, some of which he pronounced undoubted syphilis due to the same cause.'' (Quoted from Miller.)

During the century since, and even during the early period of modern dentistry, cases of syphilis acquired in the dental chair have been recorded. Recently I observed a case in a young officer who undoubtedly received an unmerited syphilitic chancre at the site of a tooth extraction during the operation.

SYPHILIS AND DENTISTS.

It is the duty of dentists to acquaint themselves with the various lesions of syphilis found in the mouth, and lesions which simulate syphilis should be regarded as suspicious. The dentist should observe extra precautions until he has had the patient consult his or her physician, and received an expert opinion. The reasons for this are almost self-evident, and concern the welfare of the patient, because what his non-technical knowledge considers merely a ''cold-sore'' may be an early chancre. Immediate treatment before the generalization of the disease makes absolute cure almost certain. Further, the dentist must protect himself against infection and its results to self and family. Thirdly, the dentist must consider his other patients, since the disease may be transmitted through intermediate sources as instruments, cups, etc.

PREVALENCE OF SYPHILIS.

Estimates from hospitals, out-patient departments, obstetrical services, etc., have given the prevalence of syphilis in the general population as about ten per cent. Although classed for many centuries as a venereal disease, syphilis may be transmitted by other than sexual practices. Bulkley collected statistics of 9,058 extragenital chancres, of which 1,810 were on the lips, 734 in the buccal cavity, 307 on the tonsil, 157 of the tongue, 37 of the gums, and 145 of the cheeks; that is, over forty per cent. were in the dental field. More recently (1910) Scheuer collected 24,855 recorded cases of extragenital chancres, of which 5,665, or about one-quarter of the whole number, were upon the lips. In 1,575 cases the chancre was on the buccal mucous membrane; 1,608 on the tonsil; 448 primary lesions of the tongue; and 154 of the gums. There were 2,838 recorded chancres of the nose, neck, chin, and forehead. Porter at the Barnard Free Skin and Cancer Hospital reported 24.5 per cent. of 295 patients with chancre presented the initial lesion of syphilis on other than the genital surfaces. Of the 54 patients so affected 31 presented the chancre on the lips (9 on the upper, and 22 on the lower); 6 on the tongue; 2 on the cheek; 2 at the angle of the mouth, and 1 on the tonsil. Porter also reported from the Washington University Dispensary about 11 per cent. of the total primary sores located extragenitally; 6 on the lower lip; 1 each on the tonsil, cheek, and tongue.

INFECTION OF DENTISTS.

It has been estimated that about 35 per cent. of all the chancres of the finger have been found among dentists. Other dentists have been infected through the habit of holding instruments between the teeth. One dentist is reported to have been infected by scratching himself on the jagged tooth of a patient, and then to have contaminated the wound by the instrument which had been in an infected patient's mouth.

THE CAUSE OF SYPHILIS.

In 1905, Fritz Schaudinn (1871-1906), working with Erich Hoffmann, demonstrated under the microscope the causative agent of syphilis, the Spirochæta pallida, or as Schaudinn later named it, the Treponema pallidum. This organism satisfies the postulates of Koch, namely, that (1) it is a specific organism always associated with the disease, (2) when isolated in pure culture, and (3) inoculated into a healthy susceptible animal produces the disease, and (4) may be obtained again in pure culture.

The method of choice for the diagnostic demonstration of the S. pallida is the dark field illumination method. The staining by India ink (Burri) or by Giemsa may be used, but are not so satisfactory. The S. pallida observed under the dark field is a motile organism. It is about seven microns long (diameter of a red cell) has an average of eight turns, is exceedingly thin, straight, and has a regularity of spiral that makes it seem possible to run a ramrod through its long cylindrical axis. The motions are (1) a spiral, corkscrew, or "bit" motion: (2) back and forth in the fluid medium so that it remains in the same field for a long time, and (3) a rising and sinking motion, making it essential to focus to keep the same organism under observation. The S. pallida maintains the same form when at rest. Double, triple, or even giant forms may be observed.

Smears from the mouth are contaminated with the Spirochætæ macrodentium, microdentium, and buccalis. There is no difficulty in distinguishing the coarse macrodentium with its smaller number of thickly set spirals from the delicate pallida, but the microdentium and buccalis may give some trouble unless one possesses an intimate knowledge of the behavior of the offending organism. The last named are both as fine as the pallida, but they move differently, have not the same form maintained throughout their course, change character when at rest, and are likely to have one or more spirals uneven in height. A study of the usual spiral flora of the mouth will be well repaid by the wealth of information acquired. Tooth cavities and the spaces between the teeth are the incubators for this type of bacteriological investigation. It will be surprising to most to have revealed an indefinite number of organisms even in the most cleanly kept oral cavity.

VULNERABILITY OF THE S. PALLIDA.

It is important for the dentist to have some ideas as to the vulnerability of the S. pallida. In its natural habitat, the lesions of the body, it is alive and infectious. In the laboratory under special conditions, they may be kept alive indefinitely. If moist, as on a wet towel, Zinsser and Hopkins showed that they were viable after eleven hours, even if exposed to room temperature and sunlight. It has been proved by numerous observers that drying causes the organism to lose its power of motility, and that after drying, infected objects are no longer capable of transmitting the disease. Reasoner has shown that soap has in all probability a lethal effect on the S. pallida. Recently I have been experimenting on the action of weak acetic acid, and on the basis of clinical observation and miscroscopic examination I think that acids have an equal lethal effect. The observations of Metchnikoff, that the local application of 33 per cent. calomel ointment to the site of inoculation of S. pallida prevented the development of the infection, providing the local treatment were made within several hours, are very important. Mecuric chlorid in 1:1000 solution is about equally effective. The practical application of these observations is that the dentist who may accidentally come into intimate contact with infectious syphilitic material should *immediately* wash with plenty of soap and water, and apply a 33 per cent. calomel ointment in lanolin base, rubbing for five minutes.

THE WASSERMANN TEST.

In 1906, Wassermann working with Neisser and Bruck brought to the profession a practical blood test for the detection of syphilis. Although this test bears Wassermann's name it was based on previous work of Bordet and Genou on the fixation of complement.

The Wassermann reaction is a delicate test depending on many factors. It is beyond the scope of this writing to describe the test in detail with its many modifications. It is necessary for the dentist to know that a report is reliable only if from a well-controlled laboratory, and that the test should be regarded, so to speak, as one symptom, rather than as the diagnosis. Clinical observation and bacterial investigation should be considered.

A report of four plus positive Wassermann from a reliable and painstaking laboratory undoubtedly means that the patient has or has had active syphilis. The so-called paradoxical four plus or non-specific positive reactions occur in Frambœsia tropica, (Yaws) sleeping sickness, and in nodular leprosy, but these diseases are of infrequent occurrence in temperate climes. Slightly positive reactions may occur in tuberculosis, and perhaps in measles and scarlet fever.

The New York City Board of Health advisably states on the back of each report:

INTERPRETATION OF THE WASSERMANN READINGS.

++++ means very strongly positive; +++, strongly positive; ++, positive; +, weakly positive; ±, doubtful; –, negative.

A diagnosis should never be made from a weakly positive or doubtful reaction (+ or ±), but in a case of syphilis that has had specific treatment such a reaction would indicate the necessity of further treatment.

A weakly positive or doubtful reaction (+ or ±), where there is no specific history and where the test is made simply as an aid in diagnosis, is usually considered negative. A negative Wassermann reaction does not absolutely exclude the possibility of syphilitic infection.

In primary syphilis, period of chancre, the Wassermann is negative, although the S. pallida may be found in the sore. This is an example of syphilitic infection with negative Wassermann. Later in the primary stage when the lymph nodes that drain the area of the chancre become enlarged, and the spirochetes are probably circulating in the blood, the Wassermann becomes positive. In the stage of generalized eruption, the secondary stage, the Wassermann is regularly positive. In the tertiary stage, perhaps 80 or 90 per cent. of syphilitics give a positive reaction, but a small percentage of undoubted syphilitics never give a positive result even after treatment—the so-called "provocative" reaction. Persons with syphilis of the nervous system may have negative blood Wassermann reactions.

THE SYPHILITIC INFECTION.

Before proceeding to a consideration of the different phases of syphilis as they concern the dentist, it will be of service to rapidly review the successive phenomena which attend the acquired syphilitic infection.

It is axiomatic that all syphilis follows pre-existing syphilis. The presence of the S. pallida is one of the factors in the transmission of the disease. The second factor is that these organisms find a break in the skin or mucous membrane of the new host, since the spirochete will not thrive so readily on the absolutely healthy unbroken skin. The lack of continuity of the epidermis need not be more than microscopic in size, but the S. pallida will flourish and infect the individual. A third factor is that the person must be free of syphilis, because a syphilitic cannot be reinfected until he is entirely cured of his old syphilis.

Syphilis can, of course, be transmitted other than by direct contact. Any instrument that has come in contact with an open lesion or the blood of an active syphilitic may be the means of carrying the infection, unless sterilized by heat, chemicals, or drying. The slight wounds made by the dentists in the most casual instrumental examination of the mouth are ideal for the well-being of the spirochete because of the moisture and warmth of the oral cavity. The possibility of infection at the time of tooth extraction, because of the condition of the insulted gum, should not be minimized.

About ten to forty days after the successful implantation of S. pallida on fertile soil, the first lesion of syphilis or the chancre appears at the site of inoculation. This period without symptoms is known as the primary incubation time and is on the average about three weeks. During these three weeks the original wound of entry may have entirely healed, but the spirochetes below the surface have multiplied and invaded the neighboring lymph channels. This is proved by the fact that surgical removal of the chancre does not prevent later manifestations of the disease. It is important to remember that the Wassermann is negative during the first incubation period and during the early period of the chancre. The early period of expression of the syphilitic infection is, however, the time when the disease may be most successfully attacked. and clinical skill and the microscope should be used to make the diagnosis.

The period next advanced from the primary syphilis is the silent generalization period. The chancre is present, there are clinically no secondary skin or mucous membrane lesions, yet the Wassermann is strongly positive. The spirochetes are free in the blood at this period but no metastatic foci have had time to manifest themselves.

The secondary stage of syphilis or the stage of generalization with symptoms is the next period in the disease. The spirochetes are lodged in end capillaries everywhere in the body, and excite a varied reaction according to the susceptibility of the individual and the character of the tissue. On the mucous membrane of the mouth the mucous patch is of importance, because it is teeming with the exciting organisms and is rife with infectious possibilities. The lymph glands throughout the body are enlarged; the skin may present polymorphous lesions; the hair may fall out and papules in the flexor surfaces become hypertrophic—so-called condylimata lata. The Wassermann is always positive in secondary syphilis. About 25 per cent. of secondary syphilitics give evidence of nervous system involvement clinically or by laboratory tests.

The lesions of the secondary period may regress with or without treatment, and the patient is in the stage of potentially active syphilis. Generalized eruptions may recur, or isolated lesions manifest themselves as gummata of the skin, bone, brain, or other viscera. The Wassermann remains persistently positive or becomes negative for short periods only. The gumma forms when a localized focus of spirochetes becomes active because of some injury to the part, or other reasons which are as yet obscure. In the mouth gumma of the hard palate ulcerates and forms perforations. During this period symptoms of the nervous invasion of the spirochetes may be made evident clinically as paresis or locomotor ataxia.

Syphilis is one of the diseases which are transmitted intra-utero to the offspring. When the syphilitic marries, having had no treatment or inadequate treatment, although he presents no lesions, he more than likely infects his wife. She may never become pregnant, or she may conceive but the pregnancies are frustrated by early miscarriages; birth of dead children; living children that show all the evidence of syphilitic infection except the chancre; and then she may give birth to children that do not show any lesions until twelve to twenty years of age. The chronology is not as regular as given since living, apparently healthy children may be born between two undoubtedly syphilitic miscarriages; but it does seem as if there is some attenuation as far as the results on the newly born are concerned. Of course, all the open lesions and discharges, especially the early ones, on the congenital syphilitic are infectious. It is generally held that the infection may be carried to the third generation. Many problems of congenital syphilis still remain to be solved, and are not touched on here. It may be mentioned that syphilis is not hereditary in the sense that the disease is transmitted as one of the characters of the chromosome system. The term congenital syphilis is more fitting to the process, and less committal to a mechanism which is not fully understood.

MOUTH LESIONS.

The lesions of syphilis about the mouth are outlined briefly as they touch on the dentist's work. It may be well to quote that master of medicine who has recently passed from among us, Osler, "Know syphilis in all its manifestations and relations, and all other things clinical will be added unto you."

PRIMARY ORAL SYPHILIS.

The chancre in and about the mouth may be acquired by kissing, use of infected cups, instruments, and abnormal sexual practices. It is generally agreed that a break in the continuity of the skin or mucous membrane is essential, but it is also maintained that the active, pointed spirochete may penetrate unbroken surfaces. It is not unusual to have the chancre follow a simple lesion of the lip like a "cold-sore" if the patient has come in contact with infectious material. The chancre may be a single lesion, or it may be multiple. Usually the chancre is painless. There are several types of chancre classically described, but the special conditions of moisture and warmth about the oral cavity tend to modify these types. Secondary infection by the mouth organisms may also give an atypical appearance to the chancre. It should be remembered that the primary lesions of syphilis which have not had any antiseptics, especially mercurials, applied, will be found rich in S. pallida.

Chancre of the lip is the most common of all extragenital chancres. The lower lip is most often affected. If the lesion is in the median line it may appear double. The inner surface is less affected than the outer. I have seen no record of the primary lesion at the vermilion border.

The chancre of the gum is the rarest of the oral chancres. The danger of transmitting syphilitic infection at the time of tooth extraction should be considered possible, however. Chancre at the base of the tooth may follow manipulations, such as scraping, in which the gum may be injured by an infected instrument.

The tip, dorsum and sides of the tongue are the usual sites for chancre of this organ. A natural fissure may be infected. Many chancres of the tongue are atypical, erosive in character, but some assume the same characters as chancre of the skin.

The tonsil may be the focus for the growth of spirochetes. It has been assumed by some that all chancres of the tonsil are the result of unnatural practices. This is not the case, however. I have seen at least one chancre following an incision of a peritonsillar abscess with an unsterilized instrument. It is not so far-fetched either to consider that the tonsil may become the site of chancre for spirochetes planted on some other portion of the oral mucous membrance. Chancre of the tonsil may simulate non-specific diseases as Vincent's angina, tonsillitis, etc. One should be cautious regarding the identification of the mouth spiral organisms when examining for S. pallida.

ADENITIS OF CHANCRE.

About two weeks after the first appearance of the primary lesion the satellite glands become enlarged. For chancre of the median line of the lip, the submental group is affected, and usually the submaxillary. Bilateral submaxillary enlargement may follow chancre to either side of the median line with more enlargement to the affected side. Chancre of the lower gum is followed by sublingual and submaxillary enlargement. Primary lesion of the upper gum usually causes enlargement of the deep chain of glands probably behind the pharynx. Tongue chancres excite reaction of the sublingual and submaxillary groups. The draining glands of the tonsil are those at the angle of the jaw.

The method of gland puncture for the demonstration of the S. pallida has been advocated, since the puzzling presence of other spirochetes will thus be avoided. I have not had the success reported by others using this method.

SECONDARY ORAL SYPHILIS.

It is important to remember that the mucous membrance lesions of the disease appear prior to the generalized skin lesions of the secondary stage of the disease, because of the vascularity and character of the mucous membrane. This accounts also for the Koplic spots appearing in early measles a little before the rash of this exanthem.

Early in the clinical observation of syphilis it was not generally believed that secondary manifestations of the disease in the mouth were part of the infection. Treatises are existent claiming, for example, that all such lesions were due to the mercury used therapeutically. (In those days they gave mercury until it produced salivation.) Other gentlemen of the same early period thought that the mucous membrane lesions were not infectious. We know better now.

A generalized erythema or a mottling of the mucous membranes may be the first sign of the generalization of syphilis. Mucous patches are present in about half the cases of secondary syphilis. They may appear on the tonsil, cheek, lips, palate, and less frequently on the gums. The mucous patch is a flat lesion, rather whitish in the center with a narrow rim of erythema about it. The mucous patch may become hypertrophic and assume the character of condylomata lata. At the angle of the mouth the mucous patch becomes the split papule, because of the repeated trauma of opening the mouth. This is a most persistent lesion and is always infectious. It should not be confused with the disease known as ''perleche,'' which simulates it closely, and which is streptococcic in origin.

Recurrent and persistent secondary lesions of the mouth are of frequent occurrence in the untreated or under-treated patient. As long as the S. pallida is present such lesions are infectious no matter how old the infection may be.

DANGER OF THE MUCOUS PATCH.

Fournier has made a summary of the dangers of the mucous patch, which I quote in full from MacKee's American Edition p. 499:

Dangers of the Mucous Patch. We may say approximately that out of ten syphilitic contaminations one is derived from the chancre against nine from the mucous patch. And how can it be otherwise?

1. The chancre has only a limited existence of a few weeks.

2. The chancre occurs only once in the whole course of the disease and is not reproduced.

3. The chancre with its induration, ulceration, and satellite bubo, is more observable than the mucous patch, and consequently more attention is paid to it.

While on the other hand:

1. The mucous patch is essentially liable to recurrence, even ten or twenty times.

2. The mucous patch is a lesion with multiple localizations, which may affect the mouth more often than the genitals. but many people believe that syphilis, as a venereal disease, is confined to the genital organs; and many thinking that con-

tagion is only transmitted by coitus expose themselves to the risk of contagion by the mouth.

3. The mucous patch is a lesion which may occur several years after infection, even ten years after the chancre, at a time when the disease is believed to have ceased to be contagious.

4. Lastly, the mucous patch is especially dangerous by the excessive benignity which it often assumes, when it consists simply of a simple erosion. Many patients, deceived by such appearances, expose themselves to transmit contagion.

Here are a number of excellent reasons to explain why the mucous patch causes an indefinitely greater number of contagions than does the chancre.

For example, the contaminations of wet nurses is almost invariably due to a mucous patch in the mouth of the suckling. Again, the infection of married women is almost always caused by a mucous patch in the husband.

Of all the lesions of syphilis, it is the mucous patch from which the greatest number of contagions are acquired. . . .

LEUKOPLAKIA.

There is a lesion of the mouth which is generally ascribed to syphilis, the so-called leukoplakia. It is a white, diffuse, somewhat raised lesion, usually on the buccal surface of the cheek, but found also on the tongue. It has been compared to the normal white patches found in the black mouths of dogs. Smoking was formerly believed to be the activating cause, syphilis the predisposing cause of these lesions. Many writers now doubt both assertions. In all probability these patches are not infectious and their importance lies in the fact that they become the site of malignant degeneration.

TERTIARY ORAL SYPHILIS.

Tertiary syphilis lesions contain few S. pallida, hence these lesions are potentially infectious. There are, however, few recorded cases. The fissures of the tongue often found in syphilitics are tertiary manifestations. There are, it should be remembered, many non-syphilitic causes of fissuring of the tongue. The textbook gumma lesion of tumor, ulceration, and punched out character of the resulting ulcer is seldom found in the mouth. Secondary infection usually causes gumma lesions of the mouth to simulate the lesions of new growth or tuberculosis. It should always be borne in mind that both these last-named lesions may appear in a syphilitic.

Gumma of the hard palate protrudes into the oral cavity.

Breaking down of this gumma usually results in perforation, because of the necrosis of the bone.

It has been my experience that such perforations occur much sooner in the course of the syphilitic infection in people of the southern countries. I have seen many South Americans in New York City who showed such perforations as early as the seventh month of their syphilis. In Haiti I saw at least a hundred such perforations in the syphilis ward of a hospital. Ordinary treatment is of no avail in restoring lost tissue, and the operative measures devised are not universally successful.

(Concluded in November Issue.)

THE NEED OF THE HOUR IS THIS: GOOD MEN FOR LEADERS

Somewhere on Vancouver Island is a little town in an agricultural community where life is made much better and happier and the future is made much rosier because of the work of a young doctor.

He is just now getting his practice back into shape. While he was absent on the western front it was pretty well shot to pieces.

This young doctor comes of a good old country family. He had the advantage of an excellent education and of wide travel.

He has a bit of a farm and on a very small area he produces wonderful crops. This is his hobby: His little farm, his cows, his poultry. When the stock breeders hold a meeting he attends and takes a keen interest in the business of the hour. He attends the Farmers' Institute and supports it. In the affairs of the town he is active. He is a real force in the community and no one can estimate the great good this young doctor performs for that community. He is so disinterested—so enthusiastic—so tactful—so energetic! He is a real leader of men.

Men who have education and the advantage of travel and who have natural talent should be leaders in the new settlements. They owe it to society to pitch in and play the game along with the settlers. In these little pioneer communities are many discouraging conditions which must be overcome. The young doctor on Vancouver Island is setting a sterling example. Such men are doing service to the community, the benefits of which will remain for all time.—"Farm and Home."

"YOUR TEETH"

Rea Proctor McGee, M.D., D.D.S., Cleveland, Ohio.

INLAYS IN TEETH.

An inlay is a filling that is made outside of the mouth and when finished is fastened in the tooth cavity with a dental cement. The making of inlays is a very ancient process that was a lost art for many centuries. The Aztecs of old Mexico used a green stone inlay in their teeth. The green stone was not used to stop cavities as we use inlays, but was purely decorative. The Aztec nobility had fanciful designs cut in their front teeth, probably tribal marks on the order of our coat-of-arms, then the green stone was cleverly cut to fit the cavity and cemented with a very durable transparent cement. The durability of these prehistoric inlays is proved by the fact that there are in existence a number of Aztec skulls with the green stone still firmly in place.

Inlays of porcelain were the first to be made in modern times. Porcelain was used because it can be made to closely approximate the color and characteristics of the natural teeth. The process of making a porcelain inlay is very difficult, but the result is so satisfactory that many are made for fillings where gold would be objectionable.

The gold inlay is now very widely used. There are many ways to make them but the object is the same; that is, to perfectly fill the cavity, to restore the original contour, and to be durable. All of these things a gold inlay does. The miniature sacting that is required to make a gold inlay is an art of modern times. Gold inlays are made with remarkable accuracy, and as they are made outside of the mouth, they are much less painful than gold fillings that must be malleted into the tooth. Whether a good gold inlay is better for the tooth than a gold filling that is also good is not yet decided. I would say that either one is all right.—"Oral Hygiene."

Editorial

EDITOR:

A. E. Webster, M.D., D.D.S., L.D.S., Toronto, Canada.

ASSOCIATE EDITORS:

ONTARIO—M. F. Cross, L.D.S., D.D.S., Ottawa. Carl E. Klotz, L.D.S., St. Catharines.

QUEBEC—Eudore Debeau, L.D.S., D.D.S., 396 St. Denis Street, Montreal; Stanley Burns, D.D.S., L.D.S., 750 St. Catherine Street, Montreal; A. W. Thornton, D.D.S., L.D.S., McGill University, Montreal.

ALBERTA—H. F. Whitaker, D.D.S., L.D.S., Edmonton.

NEW BRUNSWICK—Jas. M. Magee, L.D.S., D.D.S., St. John.

NOVA SCOTIA—Frank Woodbury, L.D.S., D.D.S., Halifax.

SASKATCHEWAN—W. D. Cowan, L.D.S., Regina.

PRINCE EDWARD ISLAND—J. S. Bagnall, D.D.S., L.D.S., Charlottetown.

MANITOBA—M. H. Garvin, D.D.S., L.D.S., Winnipeg.

BRITISH COLUMBIA—H. T. Minogue, D.D.S., L.D.S., Vancouver..

VOL. XXXII. TORONTO, OCTOBER 15, 1920. No. 10.

OPENING OF THE ROYAL COLLEGE OF DENTAL SURGEONS

The Royal College of Dental Surgeons opened its regular session Sept. 23rd, 1920. There is a total registration of about 900 in all departments. Pre-dental dental nurses, freshmen, sophomores, juniors and seniors. There were many more applicants than there was accommodation for. It was determined that only 150 freshmen would be accepted but when all the soldiers and all the predental of last year and all who applied and were refused last year were accepted there was little room for any others so fifteen in addition were taken.

The large classes of the earlier years has made it necessary to greatly increase the floor space. During the past few months new accommodation has been provided for teaching practical anatomy which was made necessary because of lack of accommodation in the anatomical department of the University where this subject has been taught for the past thirty years.

Rooms are now provided for teaching practical physiology, pharmacology, drawing and modeling. On the infirmary floor is added a patients' waiting room, X-ray room, dark room, clinical room for orthodontia, crown and bridge work, two model operating rooms and a small recitation room. The two lecture rooms on the main floor were each too small to hold one class so they have been made into one which holds 200 students. A strip 12 feet wide next College Street was taken off the lecture rooms to enlarge the faculty room, and on the locker room floor provide several small rooms for students and teaching prosthetics.

Although all of these rooms are not fully completed, yet everything has begun in the year with unusual smoothness.

Editorial Notes

Never take any medicines in the dark. Keep poisons in a locked cupboard.

⁂

Dr. Kent, Boston, lectured on "Oral Hygiene" in Montreal, September 27, 1920.

⁂

Never place caustic or poisonous drugs, heavy or sharp tools on a shelf above the shoulder line.

⁂

Dr. A. W. Thornton addressed the Rotary Club of Montreal on the necessity of careful mouth hygiene.

⁂

There has been introduced a hobbyhorse dental chair for youngsters to overcome the bad training of generations.

⁂

A civic health centre has been established in the old library building, Hamilton. A dental clinic is an important part of the centre.

⁂

McGill Dental Faculty opened its doors to a much increased number of students. Additional space has been prepared and there is every reason to think that the new faculty will be quite as large as many others. Dentistry now stands in the same relation to the University as any other faculty. It takes advantage of the facilities of medicine, arts and engineering to teach many of its scientific branches. Its clinical department is located in the Montreal General Hospital and is an integral part of this organization. It is gratifying to note the progress of dentistry in all parts of the Dominion.

Dr. Booke Nicholls, of Melbourne University, Australia, paid a visit to the Royal College of Dental Surgeons on his way home after visiting many of the dental schools of Europe and America. He reports that £500,000 has been donated to Sydney University out of which will be endowed a chair of dental science. Dr. Nicholls is studying dental education and dental laws so that he may take to his people the latest of other countries.

⁂

Effort along right lines is never lost. For a great number of years the dental profession of Rochester, New York, has cared for the teeth of the schools of that city. Out of this effort came the Eastman gift to establish a dental infirmary for children. No doubt, out of this has come the establishment of the Rochester University in a broad way. Eastman and Rockefeller have given ten million dollars to establish a medical and dental faculty in the university.

⁂

Sir Kenneth Goadby, London, pathologist, author, dentist, was the chief speaker at the National Dental Association. He arrived in Montreal, August 19th, on his way to Boston. His visit to America was a short one, sailing again from Montreal, September 11th. While here he visited Boston, New York, Philadelphia, Baltimore, Albany, Cleveland, Buffalo, Toronto and Montreal. In each of these cities he spent his time in studying the methods of dental education, and especially what was being done in research. While in Toronto he was the guest of Dr. A. J. McDonagh, who, with others, entertained him at Lambton Golf Club and the Canadian National Exhibition. Dr. Goadby was knighted for his meritorious work in the pathology of latent bone diseases and other contributions to general and dental pathology during the war. His reception at the National meeting was overwhelming.

⁂

Dr. Lindsay, dean of the dental faculty of the West China Union University, who is in Canada on furlough, spent the first week of October in Toronto attending the Foreign Mission Board of the Methodist Church. Dr. Lindsay has spent thirteen years in China. He was the first dental missionary sent by any religious organization. In the beginning a decision had to be made as to what class of people should have the advantages of dentistry. Only the poor were treated. Soon the work was overwhelming, and then it was decided to treat only those who could pay something and establish a training school so that young Chinamen could be educated in dentistry. The course is seven years. At present there is but one Chinese graduate; but there are large classes coming on. The only hope for the future is to educate the native Chinese. Dr. Lindsay spent a day visiting his Alma Mater after his duties at the board meeting were ended.

Reviews

Text-Book on the Pathogenic Bacteria and Protozoa. Ninth edition, revised. A text-book upon the Pathogenic Bacteria and Protozoa. For students of medicine and physicians. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the University of Pennsylvania. Ninth edition, thoroughly revised. Octavo of 858 pages with 330 illustrations, a number of them in colors. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, $4.75 net.

The ninth edition of this well-known book bears out the high reputation of the author and publishers. Although it was revised and brought up-to-date under war conditions, the author is to be congratulated upon making so complete a contribution to the subject of general bacteriology. It covers the whole subject, is complete and comprehensive. The dental profession can no longer practice without a full knowledge of this subject, and there is no book which can be more freely used as a reference on the subject of which it treats. Vincent's Angina, Thrush, and other mouth diseases are given prominence. The publishers are W. B. Saunders Company, Philadelphia and London.

* * *

Periodontal Disease and its Treatment by Ionic Medication. By Ernest Sturridge, L.D.S. (Eng.), D.D.S., author of "Dental Electro-Therapeutics," contributor on Dental Electro-Therapeutics in "The Science and Practice of Dental Surgery," on Ionic Medication in Prinz's "Dental Materia Medica and Therapeutics," Fellow of the Royal Society of Medicine, Member of the British Dental Association, etc.

This is a small book of less than 140 pages, but contains the essentials of the treatment of "Periclasia" as well as a description of the methods of Ionic Medication. Although there may be here and there methods of treatment suggested by the author, which will not meet corroboration by all practitioners, yet it contains such a full and complete systematic statement of the modern treatment of this disease, that no general practitioner can afford to be without it. The price is $1.75, published by "Lea and Febiger."

* * *

General and Dental Pathology. With special reference to Etiology and Pathologic Anatomy. A treatise for students and practitioners. By Julio Endelman, M.S., D.D.S., Professor of Special Dental Pathology, College of Dentistry, University of Southern California; editor of the "Pacific Dental Gazette"; member of the Southern California Dental Association, the California State Dental Association, and the National Dental Association; corresponding member of the Societe Odontologique de France, honorary member of the Sociedad Odontologica de Chile, S. A., etc., and A. F. Wagner, A.M., M.D., Professor of General Pathology, College of Dentistry, University of Southern California; Pathologist and Autopsy Surgeon of the Country and City of Los Angeles; member of Los Angeles County Medical Society, California State Medical Association, American Medical Association, etc.

This is a comprehensive work of almost 600 pages, which confines itself almost exclusively to direct dental pathology. The authors are well known and the publishers have a high reputation. The introductory chapters are elementary, and the foundation of what follows. The chapter on tumors is especially good on the general subject, but it is the chapter on the soft parts of the teeth which is of special interest. It contains the most exact and detailed statement of the inflammatory processes, connected with the soft tissues of the teeth, and the surrounding parts, that has yet been published. In all of this description, the treatment is clearly indicated. This is well exemplified in the following quotation:

"The paroxysms of pain from pulp hyperemia may last from just a few seconds to several minutes, or hours, or even days. In some cases the pain is not exaggerated, although continuous; in others it is both intense and continuous; at times, for a period of seconds, the pain being unbearable. The pain may be localized in the affected tooth, but may be felt in several teeth or in the entire side of the jaw. It may also be of the radiating type, i.e., toward the temple, the ear, the eye, or the forehead. Occasionally a hyperemia in an upper tooth—the cuspid in particular—will be reflected to all of the upper teeth posterior to it, and sometimes also to a number of teeth in the lower jaw of the corresponding side. An intense hyperemia with corresponding degree of pain, or a moderate hyperemia lasting for several weeks or months, if permitted to go untreated, ends in the death of the pulp; here the hyperemia has assumed the characteristics of a nonseptic pulpitis. All pain having ceased, the patient feels greatly relieved both physically and mentally; but such a dead pulp may at any time give rise to an acute or a chronic alveolar abscess, and the chronic abscess may be either of the frank type with a sinus, or of the blind type without one."

Most dentists can apply the logical treatment if they have a fair understanding of the underlying pathology.

The price of this book is $5.50, and can be obtained from McInch & Co., College and Yonge.

CHICAGO DENTAL SOCIETY

January 27th, 28th and 29th, 1921, are the dates of the fifty-seventh anniversary meeting of the Chicago Dental Society. A cordial invitation is extended to members of all recognized dental societies.

M. M. Printz, Secretary,
25 E. Washington St., Chicago, Ill.

FOR SALE—Ritter suspension type engine, used two years good as new, 110 volt alternating current. $125.00. Dr. Lindley, Lloydminster, Sask.

FOR SALE—Having given up general practice, I have for sale a number of operative instruments, forceps, teeth, crowns, burs, etc., also several sets pyorrhœa instruments, including a set of Carr sealers. Full list on application. Box 114, Dominion Dental Journal.

WANTED—Dentist for the town of Empress, Alberta. Power-equipped office available. For information address Secretary Board of Trade.

OFFICE TO LET—Suitable for dentist—situated opposite Grand Trunk and C.P.R. stations, Parkdale. Good light, heated, with elevator service. Apply Gladstone Hotel, 1214 Queen Street West. Telephone Parkdale Number 4.

Dominion Dental Journal

Vol. XXXII. TORONTO, NOVEMBER 15, 1920. No. 11.

Original Communications

CANADIAN DENTAL ASSOCIATION

Frank Woodbury, D.D.S., LL.D., Halifax, N.S.

PRESIDENT'S ADDRESS.

This is our first convention since the establishment of peace. We welcome the ladies and our brethren from the United States, who are with us as guests, lecturers and clinicians. We do this with peculiar pleasure, because on the occasion of our last meeting in 1918 we were guests of the National Association of the United States. It was a time of stress and war.

We remember with warmth of heart the gracious brotherly feeling which prompted the invitation and prompted us to accept it.

We welcome to-day our clinicians from abroad, Dr. Clarence Grieves, Baltimore; Col. D. W. Seer; Dr. T. Sydney Smith, San Francisco; Dr. Clyde Davis, Lincoln, Nebraska; Dr: E. C. Kirk, of Philadelphia, and the men who have kindly consented to give papers and clinics from Canada.

We welcome the men representing every province in our broad land.

You will learn with regret of the death of a member of the executive committee, Dr. L. De Guise, of Montreal. Dr. De Guise was a member of the staff of the Dental Faculty of Laval Dental School, a man of great promise. The committee on necrology will present suitable resolution of regret and condolence. Dr. Charron, of Montreal, was appointed to fill the vacancy.

When our last meeting was held, dentistry was mobilized for war, and charged with a very important mission. War surgery and war pathology was about all we could think about. Now peace has come, and we are beginning to breathe more freely and settle down to apply to civilization some of the things that have been learned. It is not my purpose to speak further of this. I want, however, to welcome back the splendid men who sacrificed practice and home, and risked health and life and went overseas. Men, we welcome you back.

From the nature of your work there were but few casualties, but there were some. I hope this National Association will suitably express by resolution their sympathy and sorrow, and order it published in the dental journals.

This meeting marks an epoch in the history of the Canadian Dental Association; inasmuch as we shall put into effect our new constitution which is designed to change us from a loosely organized body which performed a doubtful function between conventions, to a carefully organized living association which is calculated to touch the dental interests of our whole Dominion in a practical way, throughout the year.

Standing at this point, the pioneers, who have worked and prayed, sometimes under great discouragement but with dogged persistence, look ahead with confidence, feeling that foundations sure and strong have been laid, upon which a lasting structure will be built. We pass it on to you young men, knowing that the meeting at Ottawa, 1920, will always be a landmark and a new starting point.

We recommend that the by-laws be adopted at the earliest possible moment and submitted to a strong committee to work out the details of organization and have the machinery in smooth working order before the close of the convention.

It is not necessary that I should more than touch upon some of the activities in Canada that are of great significance to the profession and public.

Canadian Oral Prophylactic Association.

The vision and optimism that created this corporation, the altruism which has characterized its policy, and the immense public good which it has achieved are matters of pride to the whole Dominion. Without it much of the public work already accomplished, could not have been performed. This corporation has consented to act as educational committee for the Canadian Dental Association for a number of years. We could not have performed anything like the same good had our Association formed an independent committee on oral hygiene and education. The report of this committee will be of great interest.

We must all be gratified with the prospectus of activities just published, into which the Canadian Oral Prophylactic Association is proposing to labor.

RESEARCH.

At the last meeting of this Association, the committee on research was organized and regulations for its operation were adopted. The Royal College of Dental Surgeons and the students of the Dental School in Toronto have taken great interest in it and raised funds which now amount to several thousand dollars, for the carrying on of its work. Little has been done outside Ontario. This is largely, we believe, because the work of the research committee has not been sufficiently known. If it has been apathy and lack of interest, it is inexcusable. If from lack of real knowledge, it is pardonable—but after the presentation of the report, and the aims of the research foundation are placed before you, I hope that an active campaign should be inaugurated.

Every man should be present when this report is presented. There is no reason why every one of the dental schools of Canada should not be centres of research under the guidance of this foundation. Indeed, they ought to be. It will take time, but it must come. It will take money, but we must provide it. There can be no work in which we can invest our interest and sheckles to bring greater return in increased knowledge and greater appreciation of what is demanded of us.

DENTAL EDUCATION.

Each year marks advances in dental education.

The Canadian schools have for many years conducted the four years' course before graduation, based upon university matriculation in Arts. In this Canada has led the continent by some fifteen or more years. In January last, the Dental Faculties Association of Canada was organized in Toronto. Representatives of each of the four schools were present, and a schedule of suggestions was drawn up and agreed upon for presentation to the various educational institutions involved. Unanimity marked the deliberation.

The following questions were discussed:

1. The matriculation standards and regulations upon which students may be admitted.
2. The terms upon which students may be exchanged or transferred.
3. Treatment of expelled students.
4. Fees.

5. The addition of an extra year of preparation before undertaking the four year course in dentistry, called the pre-dental year.

Some of these have been definitely adopted already, and it is hoped that at a meeting to be held during this convention, an understanding may be reached upon all points.

As the years pass and the importance of dentistry in the preservation of the health of the world is being recognized, and the larger responsibility is being placed upon the profession, the necessity of better preparation becomes more apparent. Better preliminary education must be required if we are to keep step and continue to merit the confidence of the public.

Any man who is engaged in dental education knows by observation that, everything else being equal, junior matriculation in Arts is not a sufficiently broad foundation upon which to erect a professional career.

It is not too early to introduce another year of preliminary education for dental students in Canada. The student needs the added mental development. He needs the added outlook on literature and the development of higher tastes. He needs it in order that he may be able to grasp in any great way the professional subjects with which he is called upon to grapple in his training, and above all, he needs it that he may better serve his community professionally and as a citizen.

The pre-dental year is really a necessity. It will give the student a year in English literature. A year in drawing and modeling. It will dispose of his biology, physics, and part of his chemistry, and will give him a year in French.

Nearly all present were graduated on a much lower minimum preliminary requirement. It will be all the more to our credit if we say, as we know we should, "Another year must be added to the requirements for entrance into the dental schools of Canada." I hope this Association will endorse this movement on the part of the colleges, and pass a recommendation to that effect.

Last year the dental schools were taxed to their utmost capacity with students, and in each one plans are now being made for enlargement. The increased interest which is being taken by the general medical profession in the lesions and infections of the mouth and the panic into which the public has been thrown, has increased the demand for dental services far beyond the capacity of the present graduates to supply. Thus many young men are now seeing in dentistry an opportunity for a vocation and a most worthy one. No doubt but that our schools will all have large freshman classes during the coming session.

Post-graduate schools are being held in various parts of the Dominion, some under the auspices of the dental schools and some by provincial or local associations. These are of immense value to the practitioners throughout the country.

LEGISLATION.

We have some excellent dental laws in Canada, and many excellent features in all of them, but at the present time there is a tendency on the part of many in our Legislatures to advocate a lower standard of qualification for the dental practitioner, and in some cases to allow unqualified men to practice on the living patient.

This Association can be of great value to the provincial associations by making a statement respecting the necessity of maintaining high qualifications for dental practitioners.

I strongly recommend that the committee on legislation which is to be formed, make it their business to formulate a pronouncement respecting this matter in ample time to be used by any province needing help, at the coming sessions of the Provincial Parliaments. Indeed, that committee can be of great service to the provincial boards by securing the best and latest information respecting the attitude of Legislatures, and the various parties competing for power in our Dominion.

SPECIALIZATION.

I now desire to speak of specialization in dentistry. We have already the orthodontist, periodontist, exodontist, prosthodontist, the radiologist, the oral hygienist, and the crown and bridge specialist, etc.

If all were employed in a given mouth, the general practitioner would be simply a cobbler of carious teeth and pulp canals. I have heard of no one craving the distinction of being a specialist in this latter doubtful branch of dental practice.

No one denies the privilege of anyone to practice any phase of the healing art that appeals to him, but the dental specialist is largely operating on the better class of patients of the general practitioner, and operating in the field that has perhaps been his care for years, and there *must* be a reasonable ethical relation between them. I have not seen any pronouncement by any association as to the ethical relations that should exist between the family dentist and the specialist; between the public and the specialist; between the medical profession and the dental specialist.

My purpose in presenting this subject is to have the air cleared by a definite statement of opinion as to the ethics of the situation from this Association. It is one of our functions to set standards. I hereby recommend the appointment of a strong and thoughtful committee who shall present to this convention a resolution concerning the ethical relation of the specialist to the dental and medical profession and to the public, and the proper attitude of the public toward the general practitioner and the specialist, as well as the question of commissions and rebates. This recommendation, of course, does not affect in any way the many men who are now ethical, and working the Golden Rule, who I am sure will welcome a pronouncement upon it.

PUBLIC HEALTH.

The importance of the care of the teeth is being recognized throughout Canada in a very practical way.

It is no intention of mine to infringe upon the domain of our essayists on this important subject. It will come up for discussion in its regular place in the program. Suffice it to say, that not only the school dental clinic is being undertaken in the towns and cities of our land, but most helpful and valuable rural itinerant clinics are being established in some parts of the Dominion, which should be multiplied many-fold.

The pre-school dental clinic is being considered as a practical institution reaching as far back as the training of mothers in relation to the development of the teeth under prenatal conditions, and making every effort to assist in preserving the temporary teeth in usefulness and comfort until school age.

The Dominion Public Health Act is very broad in character, and admits of propaganda of every kind which may be calculated to safeguard the public health. This Association should appoint a strong and wide-awake committee to watch every move and insist that dental service of an adequate character be provided for in the plans of those who have the administration of this Act, and at the very earliest opportunity insist on the appointment of a dental surgeon to the commission.

The provinces are passing far-reaching Public Health Acts. We should be in a position to aid and inspire the provincial associations.

Last year Nova Scotia passed a new Public Health Act. Our provincial committee on dental education secured the insertion of the word "dental" wherever the word "medical" occurred in relation to the establishment of county health centres or public clinics. This may have been the case in other provinces.

Ontario has taken the leading role in securing the appointment of a Provincial Dental Inspector.

At this moment two health caravans are touring rural Nova Scotia, and doing untold good and inspiring great enthusiasm. So much so that Dr. Vincent, the Director of the Rockefeller Foundation, is making a special visit to Nova Scotia on August 25th to travel with one of the caravans to examine at first-hand into what is called the "most complete and extensive effort ever made to grapple with the rural health problem." I must not infringe on the domain of one of our essayists. I simply speak of these things because with each caravan there is a dental ambulance, fully equipped, and one of our best dental practitioners, who conducts a clinic in the days and has his place on every program in the evenings.

It is hoped that resolutions of a constructive character may be submitted upon the various questions now mentioned and those discussed in formal papers at this convention, that are of public interest, and put this Association squarely back of the profession.

Never before has the profession had such an opportunity to show itself worthy of the claims we make for it.

Never before was there such need for cultured men devoted to the science of dentistry as now.

Never before did the world need so many men, altruistic men, God-fearing men. Men with the national and Imperial vision in their work.

We have great opportunities. Let us, like men with vision, men with purpose, carry on.

A few years ago I saw the following statement in a dental advertisement in a local paper in the West Indies:

> "The Dental Surgeon to be successful must have
> the insight of a Scientist,
> the skill of the Surgeon,
> the heart of a Mother, and
> the touch of an Angel."

Gentlemen, these are your qualifications. See that the ideal is reached. We have much and serious work to do in the next few days. The dental men in Ottawa have done everything to make our stay in the Capital a joy, and the local committees have provided every facility for the prompt despatch of business.

Let us undertake the task before us in a statesmanlike way. Let nothing small hide the large—but with the good nature born of high purpose let us proceed with the work of the hour.

BUSINESS PROBLEMS OF DENTISTS

George Wood Clapp, D.D.S., New York.

Delivered before the Toronto Dental Society, October, 1920.

There have been many definitions given of success in dental practice by many authorities, but a plain definition does not mean the making of a large sum of money or doing a large amount of dental work of exceptionally high character.

The minimum of success should provide a dental service economical to the patient, provide a comfortable living for the dentist and those dependent upon him, and at the same time provide enough money to live on in old age.

The maximum of success should provide the highest kind of professional service, which should draw to the dentist people of education and refinement and a remuneration sufficient to live in the best districts in the community, provide a competence for old age and give time for holidays and taking part in the affairs of state. In short, to provide time to become a good citizen.

What should a patient expect from a dentist? In the first place he should expect the dentist to have a diploma from a recognized dental college as well as a license to practice in the State or Province in which he resides. These legal requirements fulfilled he should expect the dentist to have average skill, and a reasonable knowledge of his profession as is required in common law.

When anyone practices a profession he assumes a special responsibility because he possesses a very special knowledge. It is this special knowledge which distinguishes a profession from a trade. A tailor leaves the cloth, the trimmings and the style of the suit to his customer, but the professional man supplies a service most suitable for his client. The knowledge required is not known to anyone and is acquired only after special study and training. It is not common knowledge. Because of this special training there is a special responsibility.

Law, medicine and divinity are the three real professions. These take care of all the requirements of mankind. Law cares for the legal and financial relations, while medicine cares for physical, mental and vital requirements, and divinity that of social and spiritual needs. Knowledge of these subjects is not common to all people.

One great difficulty in the success of dental practice is that the dentist knows much about the teeth but little about the mouth. It should be his duty to restore function rather than restore lost parts.

The patient is entitled to the entire attention of the dentist during the time she is in his office and to a knowledge of the cost of services rendered.

The professional side of dental practice has to do with the diagnoses and treatment of dental trouble. The business side begins with choice of a calling, fees to the dental college, equipment charges for services, collections and living upon fees charged. Office organization should be invisible, intensive and smooth running.

Dentists in order to succeed should have a positive knowledge of the income and outlay of their practices. This can only be accomplished by having a definite and positive system of accounting.

Judging from the number of dentists who have died dependent upon charity for a funeral would indicate there is not as good a system of accounting as there should be. Too often dentists who for the first time learn the amount of money earned in a year are astonished when it has all gone and they have so little left. It is often too late in life that a dentist discovers that he has little to live upon in his declining years.

Graduates in dentistry are on the average 25 years of age. It takes about ten years to become established in practice at the point of highest efficiency. From 35 to 55 there are 20,000 working hours from every one of which a dollar must be saved in order to have $20,000 at 55 years of age. From 55 to 65 there is a gradual decline in earning power so that during these ten years most men break even. At 65 there are still eleven years to live and no ability to earn. Ninety-seven per cent. of men are paupers at sixty-five. Sixty-six die paupers. Twenty-five per cent. leave thirteen hundred dollars. Only nine per cent. leave enough to give a son a dental education.

The consequence of not acting prudently in business and financial matters is overwork which breeds incompetency, low estimation of the public and betrayal of the trust to the public, the profession and the family.

THE RELATION OF THE GENERAL PRACTITIONER TO THE SPECIALIST IN DENTISTRY

Address Delivered before the Ottawa Dental Society by Dean Thornton, of the Dental Faculty, McGill University, Montreal, on October 26th, 1920.

At perhaps no time in the world's history have there been so many and so important changes as are taking place at the present time. At no time has it been so necessary for men almost daily to readjust their ideas and to bring them into harmony with those changing and changed conditions. The world has grown very much smaller than it was even twenty-five or thirty years ago. What with wireless telegraphy, Atlantic cables, wireless telephones, and the great advances that have taken place in science and practice, knowledge has increased to such an astonishing extent that no man can hope to be even fairly conversant with all the current thought of the day. While the world has grown smaller, knowledge has increased. The research work of the past few years has resulted in the development of science that would have been looked upon a few years ago as nothing less than marvellous, and it is quite impossible for any man to possess even a tithe of the knowledge which is available at the present time. It is quite impossible for any man in any of the professions to master all the knowledge of the profession or calling in which he finds himself. Take the profession of law, for instance. There is a great wealth of municipal law, provincial law, federal, national and international law, and these various sub-divisions are looked after by men who give their time especially to one particular branch of legal practice. The same is true in medicine. In early days medicine was a small thing compared with what it is at the present time. But the discovery by Harvey of the circulation of the blood caused the practice of medicine to become a very much wider thing; and then, in comparatively recent times, the work of Pasteur and Koch and Lister gave a new impetus and a broader and wider field to medicine. When they discovered the fact that disease was due to certain micro-organisms or pathogenic organisms in the blood stream, they threw a new light upon the whole question of disease, for before that, you know, it was thought that there were certain fluids in the body, and that a lack of harmony or balance in these fluids was the cause of disease or discomfort. More recently another discovery has added greatly to the wealth of knowledge in medicine—the discovery of the X-ray by Roentgen. Prior to that discovery some years ago, in studying the pathology of diseases, it was necessary to wait, in nearly every instance, until the patient died, and then it was an examination of non-vital tissue. Now, however, in many instances we can diagnose by using the X-ray to discover the conditions while the disease is still working in the patient, and that has added greatly to our knowledge.

Growing out of this increased knowledge and this decreasing size of the world, there has come into existence a motto that you find in nearly every business, especially in commercial businesses; and that motto is premised or contained in the two words: "Maximum efficiency." Now, what do these two words mean? Simply this; the greatest possible output for the least possible expenditure of time and energy. So we have our commercial experts in every large industry, trying to bring about that condition of maximum efficiency. In the automobile industry an exemplification may be found of the steps which are being taken in this direction. If you go into Henry Ford's factory you will find that one man is making a nut or bolt and another man a spring; that these men are doing this very often, and that they have become very expert in their work. In fact, they have practically become a part of a machine; that is, they do the work automatically. The same is true in respect to the boot and shoe industry. The machinery used in the making of boots and shoes is almost human in its perfection.

Now, what is the result of these changes that have come to the world? I think the result is seen in the fact that while there is an increase in output, that condition has practically brought about the death of initiative. In the days when a man made a pair of shoes, doing all the work himself, he put his own ideas into the work. When a man made a carriage, he put his own ideas into the building of that carriage. But now no one man does more than a small part of the work; he is simply a part of the machine, and the research work, the individual work, is left to the master minds. Years ago that same thought was expressed by Goldsmith when he went through Europe on foot, looking at the conditions of the various peoples in that part of the world, and when he put into his poem, "The Traveller," those words:

"Ill fares the land, to hastening ills a prey,
Where wealth accumulates and men decay."

To some extent, as the result of this attempt to bring about increased efficiency and output, men are decaying. But, happily, Goldsmith wrote another line in that poem:

"Those who think must govern those who toil."

It is true to-day, notwithstanding the labor unrest, that brains are greater than hands; that every action must exist first as a mental conception. So we ought to bear this in mind, all of us.

Referring again to medicine, you will remember the conception we all had of the old doctor who attended to us and our families. We would say that he knew our constitutions; he combined in himself the various specialties of the present day; he was the only specialist that was known. He was essentially a man who administered medicine, following the old line of the desire to restore that balance in the fluids of the body; and he administered medicine internally, hoping that this would be brought about. He was the physician, the surgeon, the obstetrician, the gynaecologist, the oculist, the aurist, the neurologist, the psychiatrist and the alienist. Now we have added a few more; there is the chiropractor, the osteopathist, the Christian Scientist—and the whole field has been divided and subdivided until it is almost impossible to differentiate between the many specialists of the present day. It is true that with the increase of knowledge this division became necessary, but division and subdivision have run riot during the present age. There are certain reasons for that condition. First, there is an unwillingness on the part of man to pay the price for knowledge. To get a wide knowledge means that a man must burn the midnight oil, so men are moving in the line of least resistance. They say: "Instead of trying to cover a wide field and become generally proficient, I will narrow the field of my endeavor and hope to cover it." In that way specialists have grown up. Then, there is the advanced standard of living. Men and women to-day are willing to pay the price for the best goods and the best class of service; men realize that if they call themselves specialists and live up to their calling they can obtain increased fees for their services, and that has had a great deal to do with the subdivision of medicine and dentistry into various classes or specialties.

As to the specialties in dentistry, possibly the first one is orthodontia. Then we have the pyorrhœa specialist, the crown and bridge specialist, then the exodontist; then the prosthodontist, and recently the men who are engaged in pyorrhœa work have called themselves periodontists. In fact there are so many "dontists" that it is only with a good deal of courage, and almost an expression of regret, that some of us call ourselves "dentists."

Now, in my estimation—and I want to discuss this matter frankly with you—many of these subdivisions are absolutely unnecessary. As I see it, there is not room for more than two specialties in dentistry, one the specialty of orthodontia and the other the specialty of oral surgery. Now this involves no reflection on the men who feel that they have a special aptitude for some particular calling. But it does mean that outside of these two specialties the profession of dentistry is sufficiently limited to enable any man of ordinary intelligence and common industry to give satisfactory service in these various lines, with the exception of the two that I have just mentioned. Why do I except orthodontia and oral surgery? As to orthodontia, the reason is—of course, this is only my own opinion—that the practice of this specialty requires a special fondness for and ability to get along with children. Every man does not possess that fondness and that ability. Those of you who are in general practice know how many of us used to dislike to have children come to the office at all; we did not want to bother with them. There were certain reasons for that. Perhaps some of us have so many children in our homes that we got kind of tired of it; besides, we could not make as much money working for children, so that children were not very welcome in our offices. Now, the orthodontist carries on his work largely with children, and he must be a man specially qualified to deal with them. Moreover, the practice of the specialty of orthodontia calls for perhaps a closer special study than any of the other mechanical branches of dentistry. It calls for a high standard of mechanical ability, a very accurate knowledge of the anatomy of the parts affected, and an absolute honesty of purpose in dealing with the patients and the parents of the patients. The work of the orthodontist is not finished as in the case of our ordinary practice in a day or a week, or two or three weeks at the outside; he must carry on the work for years; therefore it requires a man of peculiar temperament and peculiar ability to practice orthodontia. Then there is another reason. Up to the present, at least, I do not think that the work carried on in our schools has been sufficiently broad to enable a man to go out and practice orthodontia as successfully as he could prosthetic or operative dentistry.

In connection with this, as in connection with every other specialty, I may say that no man should go out from college and enter upon the practice of a specialty until he has had at least some years experience in general practice. Now, why? Well for this reason: the tendency of all specialists is to become lop-sided—that is unavoidable. "As a man thinketh in his heart, so is he"; if he thinks orthodontia, then to him orthodontia is the biggest thing in life. If he thinks pyorrhœa, then to him pyorrhœa is the biggest thing in life. Then there is the inability of the specialist who has entered upon the practice of his specialty immediately after graduating, to see the conditions from the standpoint of the general practitioner. Therefore, in order that he may have the confidence of the men who will send him their patients, it is necessary that he should have some years at least in general practice.

Now, for the case of the oral surgeon—that is, the man who will be able to operate for cleft palate, for hare lip, and for all the deformities that may occur in and about the mouth. Just there we approach the border line between dentistry and medicine, as this latter term is usually used. The question arises, is oral surgery a specialty in medicine or a specialty in dentistry? I have had a number of requests recently from all over the country inquiring whether dentists could come to Montreal and get some special work in oral surgery. Now, that is not possible for a man who is not trained in medicine and in surgery. A knowledge of both, it seems to me, is an absolute necessity. The essential thing in these operations is the condition after treatment and the possibilities of restoration. This demands the services of men fully trained in both sciences, but with their chief interest centered in dentistry. In the final analysis the permanent condition must rest with the skilled dentist. Now, in order to be an efficient specialist in that line, a man must be a general surgeon as well as a special surgeon. You could not imagine a man calling himself a general surgeon if he operated, say, only in cases of appendectomy. You could not imagine a man calling himself a specialist who would only operate for hernia or for hemorrhoids. These men are skilled surgeons; so we must have a man who is versed in the whole field of surgery, and who can make a success of his work if he goes into oral surgery, as Dr. Brophy, Dr. Gilmer, and other men are doing. I hope that in the near future we shall have in all our large cities, such as Ottawa, Montreal, Toronto, and so on, men who are trained and licensed both in medicine and in dentistry and who will be giving their chief attention to mouth conditions, carrying along their intensive work in the line of dentistry.

Now we come to the question of the periodontist. In my opinion the work of the periodontist should never be divorced from that of the ordinary practitioner of dentistry; I believe that every man should do his own periodonto-clasia or pyorrhœa work. Now, this does not imply that I think that as good results are being obtained by the men in general practice as by those who are making a specialty of this work. I know that they are not. But it does imply that the man in general practice should be able to give just as good and intelligent service as the specialist, if he is willing to pay the price. On what do I base this assertion? There are many cases where a man is a general practitioner to-day and a specialist to-morrow. It is quite impossible that all those who call themselves specialists should have assimilated a vast store of wisdom or manipulative ability, sufficient to cause a wide difference between the so-called specialists and the man in general practice. On the other hand I do know that many of these specialists who feel a fondness for and a special aptitude in certain lines of work have given months or years of particular attention to certain classes of work before finally making up their minds to adopt this work as a specialty. There is a reason for this. One reason is the necessity for study, and work, and practice, to develop a high standard of fitness. Another reason is the necessity for obtaining a livelihood while preparing for the transition from general practice to the work of a specialist. If the general practitioner—that is what most of us are—finds that his practice and his income are being very materially impaired, in many cases the fault must be laid at his own door and not at the door of the many specialists. To succeed as a specialist it is as necessary as in any other line of work, "to deliver the goods." In too many cases our general practitioners are all too ready to "follow the line of least resistance." Take, for instance, pyorrhœa. In the treatment of pyorrhœa conditions there are a few essentials that must be recognized. It is no longer thought possible to cure or benefit these conditions by any medicinal agent locally applied or internally administered. The men who are doing such work to-day are not relying upon medicinal agents, they are obtaining results by carefully removing the known causes and correcting existing conditions. To do this means, in the first place, the possession of suitable instruments and the use of these instruments in such a way that the diseased condition will be improved and not aggravated. In the next place, there must be a recognition of the fact that to treat these conditions successfully, time and care and skill are the great essentials and time and care and skill must command adequate remuneration.

It is no longer possible to treat a case of pyorrhœa or interstitial gingivitis, or Riggs disease or trench mouth, or Vincent's angina, or ulcerated stomatitis, or any of these conditions, by whatever name known, with the instruments usually found in the office equipment of the man in general practice, or in the time generally given to such cases. In altogether too many cases, such service is still too closely linked with the old idea of "cleaning a set of teeth" and with the old fee of fifty cents or a dollar.

There is another reason why the specialist is able to command a respect and a fee out of all proportion to that enjoyed by the men in general practice. Go to the office of any of the men in the various specialties and then go into the majority of offices of the men in general practice, and you will discover for yourself many of the reasons for this difference of respect and appreciation. Our men in general practice must lay seriously to heart the conditions of the office, their nearness to approach to aseptic conditions in all their operations, the necessity for instruments suitable for the operations which they may attempt to perform, as well as their personal appearance, professional efficiency, and personal attractiveness. One of the things, I think, that is most to be deplored, is that men so soon forget the financial advantage which results from the keeping of an office in good appearance and condition, to say nothing of their own appearance and the manifestation of a kindly nature in dealing with patients. One of the best known dentists in this province, a man known to every one of you, said to me a good many years ago, "I should not have been a dentist. I have not one single, solitary mechanical idea in my mind. I do the thing that I have been taught to do until I become fairly proficient in that thing. I continue doing it the same way until someone tells me of a better way, then I try that better way. But I have never been able to offer anything original myself." Well, that man is one of the most successful dentists we have, why? Because of his suavity of manner, his courtesy, his culture of mind, and because of the way he has always kept his office in the city in which he practices. As I have intimated, he is, perhaps, one of the most successful practitioners in the province at the present time.

There is a great need at the present time for a revival in study, so that the men who have been out of college for some time may have a chance to come in contact with recent discoveries in histology, pathology, and bacteriology, and with the variations in treatment made necessary by these discoveries.

I do not know whether you had here within the last two years, or perhaps within the last year, a man who was giving instruction in nerve-blocking and in conduction anaesthesia. I do not know whether Dr. Smith has been here or not. I took his course in Toronto—not that I hoped to use it, but simply to keep in touch with the work and for the purpose of teaching students in the hospital. Then I took his course when he came to Montreal. Now, why did Dr. Smith meet with the success which attended his work everywhere he went? Simply because he was breaking virgin soil. The men whom he was teaching had practically no working knowledge of the anatomy of the head, and face, and neck. They had no idea of the area that would be anaesthetized by the injection say, into the infra-orbital foramen, into the mental foramen, into the anterior and posterior palatine, and into the mandibular foramen; so the great part of his work was simply that of teaching the minute anatomy of these parts upon which they were working. So much have we laid that to heart that in McGill at the present time we are laying emphasis on that part of our teaching of anatomy. I think it is much more important that a man should have a knowledge of the brain centres from which the nerves rise, their position in the brain, the parts of the anatomy supplied by the brain, the part that will be anaesthetized by taking an injection into any one of these nerves, the depth of these foramina from the surfaces; the length of needle necessary; the part that will be anaesthetized—I think it is much more desirable that dental students should have a minute idea of these things than that they should be able to tell why the oscalsis of a colored man is bigger than that of a white man, or to go into details concerning the phlanges and nerves that supply your funny bone, and that kind of thing. These different things you know, but you cannot know everything; so at the present time in educational work the emphasis is being put upon those things in connection with which a man can go out and make his bread and butter, giving, in the meantime, the most efficient service.

I received a circular this week from a man who proposes to give a post-graduate course in the surgical extraction of teeth. Now, I think something of that kind is due at this time. Most of us have been extracting teeth in a manner which is anything but surgical. I think that a great advance is due and can be brought about in this line. This man is giving a post-graduate course of four days for the modest sum of $200. Now, that looks like a good big fee. We gave Dr. Smith $1,800 for a week's work in Montreal. That looks like a good deal of pay for a week's work, but he was months and months down in Alabama, where there is no anatomy law, and where he could sit at the bedside until the patient died, call for the body two minutes afterwards and prepare his specimens—he spent months down there doing work for which he did not get anything. So that if these men do qualify to give that kind of service, which will enable you to go out and do better, why we can afford to pay them a fairly good price for the service they give.

This need of study is being supplied in many places by the study classes organized by the dentists in many American and Canadian cities. The method of conducting these splendid classes is as follows: a number of men form a class to study some phase of the regular work. After the fullest investigation these men divide the work into various steps, each member of the class becoming responsible for only one step in the operation, and doing this step so frequently that he becomes expert in it and learns all its advantages and disadvantages, its easy parts and its difficult parts. So classes have been formed in prosthetic restoration; in the technique of inlay work; in conductive and block anaesthesia; in the treatment of pyorrhea; in removable bridge-work, in partial denture work. Recently Dr. Nesbit of Boston gave a course of instruction in cast clasp work, setting forth what I believe to be so far the most suitable way of making restorations that the profession has yet learned of, getting away from the necessity of grinding down and mutilating teeth in order to put on shell crowns.

In order to keep abreast of the times it is quite necessary that many of our dentists should obtain a new perspective of their relation to their patients, to themselves, and to the profession. It is simply impossible for any man to keep abreast of the times without stated periods for study and observation. It is just as necessary, if a man is to attain to his own full stature, that he should spend a certain amount of money every year in study, in travel, in coming in contact with his fellow practitioners in order to keep in touch with the newer developments, as it is that he should spend money for coal, or groceries, or clothing or material, or for instruments for his office.

Indeed his ability to buy the things usually spoken of as the necessities of life will probably be in direct ratio to the time which he spends in study and improvement, because the latter expenditure will immeasurably increase his earning ability.

Specialists are here to stay. Some men are criticizing them. Some who are suffering financially are finding fault. Most thoughtful men in the profession recognize the fact that a further subdivision would be a calamity, and that even some of those already in existence should revert to the general practitioner, whence they sprung.

In the final analysis, dental service is on a par with the bulk of commercial commodities. It is a question not only of supply and demand, but a question of excellence of the thing purchased. The whole world knows to-day the value of mouth hygiene, as well as the value and importance of a well kept set of natural teeth. Because of this knowledge, those who can pay for dental service are going to have that service from the man who can render service of the highest standard and that, in many cases, regardless of the fee that may be charged.

The important thing for each one of us to consider is this: Am I capable of rendering to my patients as good service in the field in which many men are now calling themselves specialists as are the so-called specialists, or if I am to be honest with these patients, must I send them to some other man, conscious that they will receive a standard of service which I cannot personally give to them? The whole question resolves itself into two points—personality and efficiency. I thank you. (Applause.)

(Discussion will appear in December Issue.)

SOME FACTS ABOUT WHITE BREAD OF INTEREST TO DENTISTS

A. E. Webster, D.D.S., M.D., Toronto.

Read before the Hamilton Dental Society, October, 1920.

Now and then during the past ten or fifteen years, dentists have expressed a belief that the present make of white bread has much to do with tooth decay. Several prominent dentists of England have condemned roller flour on the ground that it lost some essential elements which were found in the flour made by the stone mill. Students of diet have expressed an objection to roller flour without pointing out very definitely what was the matter with it. Most physicians recognize a certain kind of intestinal indigestion which is relieved by stopping the use of white bread and substituting a whole wheat bread.

In 1917, when the problem of feeding the nation became important, the Dominion Government appointed a commission to investigate the question of whole wheat bread. In Europe, and especially in France and England, a high percentage of flour was obtained from wheat. The average percentage is about 70 to 72, while in many countries of Europe as high as 90 per cent. flour was in use. The evidence taken before the commission is most interesting reading in the light of the present knowledge of accessory food factors. It is gratifying to know that a dentist was called to give evidence before the commission, which was a layman's recognition of the fact that diet has something to do with diseases of the teeth.

In the "American System of Dentistry," written 1885, Dr. Pearce, the author of the chapter on diseases of the gums, placed their essential cause as constitutional. In later years, Dr. Younger promoted the theory that all gingival diseases were of local origin. He defended the theory of local origin by evidence obtained from a wide range of observation. Most wonderful results were obtained from local treatment alone—but few cures in the sense that there was no recurrence. The whole practice of prophylaxis was based on the belief that gingival diseases were of local origin, and, in fact, ever since Miller's discoveries, dental decay has been looked upon as of local origin.

During these years of local dentistry, a very high degree of technique was developed. Little attention was given to questions concerning the whole body. Dentists confined their attention to the teeth and mechanical arts. This practice and complete inattention to the teeth and mouth by the great majority of the people led to numerous focal infections, which gave origin to many general diseases, followed by recovery where the local disease was removed. The pendulum has now swung the other way.

The profession has found that the theory of local origin does not explain all that occurs in dental caries or gingival disease. It is true Miller has explained how dental caries proceeds when it occurs, but does not explain why it does or does not always occur. The same may be said of gingival diseases. When the local irritant is present the manner of action is explainable, but why it is sometimes not present is not yet clear.

With the advent of highly specialized foods came special diseases. Whenever animals, including humans, lived upon the foods naturally produced and prepared in the manner of their forefathers, conditions remained as they had been. When foods became subjected to the arts of the chemist, and were separated into their component parts and rebuilt, it was not far to their preparation by synthesis. It was learned that certain constituents of food were for certain purposes, and that in many cases these essential elements were in bulk, only a small proportion of the foodstuff. The next step was easy: compress these essential elements into tablets so that they might be carried in the pocket and taken when required. If physical labor was to be undertaken, use the tablet containing the elements extracted from carbohydrates (sweets); or if growth of bone or muscle was desired, use tablet of proteid (beef extract), and so on. Mothers who did not want to nurse their babies grasped at this supposed boon to humanity. Mothers' milk was analyzed and found to contain certain elements in certain proportions. Tablets and powders containing these elements were made, and now supply the demand for feeding babies. Mothers are not now subjected to the physical drain and interference with social duties of having to nurse their young. This same general idea runs through the whole food problem from chickens to humans. Concentrates are now fed to all domesticated animals.

Out of the demand for concentrated foods has come a demand for preservatives. In some cases the concentrate is preserved by removing the germinating element, as in wheat flour, or by sterilization, as in canned or tinned fruits and meats, or by adding some chemical as formaldehyde to milk products.

The result of these highly specialized foods and chemically prepared diets has not been a success except in a financial way for a few manufacturers. In the first place, all animals are so designed anatomically and physiologically to live upon foods which are found about them, and what is more, they are best suited when in the natural state. Adaptations to new forms of diet do not occur in a single generation. One result of the concentrated foods and predigested meals was a clogging of the alimentary canal because of a lack of bulk sufficient to stimulate the muscular coats of the bowel to action. A generation of constipates is one result.

The idea that the problem of diet had been settled was so fastened upon the minds of the medical profession at the beginning of the war, that the daily ration for the soldier in constituents and quantity was provided in accordance with the weather probabilities and the amount of energy required for the day's work. The number of calories in food determined its suitability for human consumption. No other factors entered into its selection. It was all so simple, the soldier, far from his base of supply of rough food, ate from his vest pocket whatever tablet suited the day and the occupation.

All these methods of supply of human and domestic animal food have gone on in spite of the protests of many noted observers and in spite of what has been known about scurvy, rickets, pellagra, beri beri, and other different diseases.

Some dental observers have blamed roller flour for the prevalence of dental caries during recent years, others can see no other reason for decayed teeth than sugar, while another group think it is the unbalanced ration that brings decay.

It would seem from recent experiments and observations, extending over many years, that, while animals require foods containing certain elements for development and maintenance of health, there is, besides what has already been discovered, some vital or life-giving element which must be present and has not been found experimentally. It has been known for hundreds of years that sailors suffer from scurvy who do not have green foods of some kind. It appears that there are elements in certain foods which make it possible for the intestinal tract to absorb nutriment from other foods. It is useless to feed substances containing calcium to a pregnant woman or a child with the expectation that there would be a deposition of calcium salts in the bones or teeth unless there is fed with it what is known as fat soluble A which makes it possible for the calcium to be deposited. Not only is this true but it is necessary to continue to feed fat soluble A, or the bones, and no doubt the teeth, will lose the lime-salts they already contain.

The discovery of this fact explains why so many teeth are so defective in structure and why decay may be more rampant at one time of life than another. It is not enough to supply as food a sufficient amount of calories to give energy and growth but there must also be supplied a vitamine which will make absorption possible. The high temperature of cooking destroys the vitamine of some foods.

Has an essential vitamine been lost from the wheat as it is supplied in the white bread of to-day, and has this vitamine anything to do with dental cases? Dr. Stanley Burns, who was called before the commission previously mentioned, said: "I have found in young folks, when the teeth are decalcified, that by feeding with whole wheat flour for one month, I have changed the condition of their teeth. I could not reconstruct but I stopped the progress of decalcification.

"So I found that the whole wheat, not flour, but the whole wheat itself, produced this result. But you can understand it would be very hard to have a household carry out that treatment; so I found also that in the treatment of diseases of the gums, in the sloughing pyorrhœa and trench mouth, in regard to which I am at present consulting specialist for the Canadian Army Dental Corps, in difficult cases of that kind, not the simple cases, I found that these cases were largely due to the impaired assimilation of food. And, as I said, you could not keep these patients on this whole wheat diet because of the trouble it is to prepare it. There was only one other way to offset the mucilaginous nature of the food produced by the present wheat flour, as I take it, and that was to increase the ferment, which would break up the bolus in the stomach and in turn produce a true secretion to the glands of the mouth. The diseases in the mouth are largely because the mouth has lost its protection and the gums slough, and the gums suppurate because of the sloughing. The secretions in the mouth are to protect the body in two ways. The primary step in the assimilation of food is the mastication and the mixing of the food with the ptyaline of the saliva, and when these secretions are not true, you can understand it is almost a continued process, in which the bolus is passed down in an impaired condition chemically; hence the true secretions do not come back to the mouth and the second condition is worse than the first.

By increasing the fermentation you can bring about a balanced diet, and that balanced diet brings a balanced constitution. The secretions in the mouth, as I have found out, are also for the purpose—in a primitive man they would be, of course—of protecting the body just the same as animals, intuitively cure any injury of their body. When young children are injured, if they hurt a finger, their first thought is to put it in their mouth. Without any teaching or anything else this is done."

Hon. Mr. Daniel: "They put everything else into their mouth too."

Dr. Burns: "And this would cure an injury if the secretions were true, because as regards the curing of the gums in disease, you can cure the diseases purely by acting on the stomach, by bringing the true secretions there, and not by local conditions at all."

Hon. Mr. Casgrain: "Your contention is that coarse flour is the right thing?"

Dr. Burns: "I have proven it."

Hon. Mr. Daniel: "Not coarse flour, but the whole wheat grain boiled until it bursts."

Hon. Mr. Casgrain: "And next to that, when the whole wheat cannot be got, the coarse flour."

Hon. Mr. Daniels: "No, he did not say anything about that."

Dr. Burns: "I have proven that about coarse flour, using the old Aberdeen stone flour, and I found good results with it. At present, in my own family, when we cannot get that now we take the whole wheat to a hasher and have it ground fine, and while it is hard to make a bread, because it does not rise as well as the other, yet, after all by using that as porridge, and also what are called gems (bread) you can get a better condition than from roller process flour.

"Experiments have shown that the germinating element in grains contain an essential element. It has also been shown that there is a curative or essential element in animal glands, as liver, kidney and lamb fries.

"There is no peculiar element added to wheat in the stone milling process, but there is an essential element taken from it in the roller process.

"In old days, only enough wheat was taken to the mill at one time to make flour enough to last two or three months because fermentation would begin and spoil it. The enzimes which caused the fermentation and are a help in digestion are not found in the present flours. They are taken out so that flour may be stored or exported to a foreign market without fermentation occurring.

"It may not be necessarily the excess of carbohydrate as found in sugar and starches that causes decay but the absence of a vitamine which is contained in the germ of the wheat kernel."

ORAL SYPHILIS

Herman Goodman, B.S., M.D., New York, N.Y.

(Continued from October Issue.)

CONGENITAL SYPHILIS.

The dentist will not be likely to meet the early and infectious lesions of the new-born syphilitic. They approximate very closely the lesions of the second stage of the acquired disease. He may be consulted, however, because of the dystrophies which are common in the congenital syphilitic, both in the deciduous and the permanent teeth.

Observations on the dental stigmata of the congenital syphilitic are recorded as early as 1576. The work of Hutchinson (1856) is universally known, and the contributions to the subject by Fournier are generally recognized.

The following conclusions from Cavallaro, "Syphilis in its Relation to Dentition," are quoted in full as his researches and studies have not been surpassed:

I. In hereditary syphilitic subjects the following dental stigmata are found: Erosions of the crown, cuspal erosion, and Hutchinson's tooth, white sulci, white marks; delay of development and eruption; dental infantilism, microdontism; amorphism, persistence of the deciduous teeth; anomalies of structure, shape, number, direction, arrangement, and color; vulnerability of the dental system; ectopia, total or partial absence of teeth; wearing away, premature caries, premature loss of teeth, space between teeth, diastema, and the following maxillary stigmata; malocclusion, defective articulation of the dental arches, prognathism, and cleft palate.

II. The dental stigmata are the most frequent, characteristic, persistent, and indelible among the stigmata of hereditary syphilis.

III. The erosions are systematic; they occupy the same level on homologous teeth, and a different one on teeth of a different order. Besides, they have a marked predilection for some teeth (Hutchinson's erosion in the upper centrals, horizontal grooves in the lower incisors, cuspal atrophy in the canines and first molars).

IV. The dental stigmata do not belong exclusively to the second, but are also frequently found in the first dentition. Some cases of dental stigmata in the third generation have been recorded.

V. The cup-shaped or honeycomb erosion on the deciduous molars, especially on the second, is very frequent, and we have generally found it in our observations.

VI. The dental alterations as found in idiots, backward children, etc., represent a type quite different from those found in hereditary syphilitic subjects. Hutchinson's tooth, the systematic lesions, the horizontal grooves, dental infantilism, and cup-shaped erosion in the deciduous molars are peculiar to hereditary syphilitics, while in idiots the vertical grooves and megalodontism are noted.

VII. The dental stigmata are rarely found alone (we have observed only three out of fifty-six cases); they are generally associated with other stigmata of the head or with other general concomitant stigmata.

VIII. A relationship between the factors of Hutchinson's triad, especially between the dental and the ocular lesions is very frequently found.

In fifty-six cases of dental lesions we have found in the dental follicles near the so-called auricular lesions twelve times.

IX. The anatomical and pathological examination of the dental follicles and of syphilitic teeth furnishes us with the following characteristic symptoms: Constrictions which clinically correspond to the cuspal atrophies; alterations of the enamel and dentin; interprismatic spaces, interglobular spaces, rounded islands, granulations due to an inhibitory disturbance which acted upon the tissues during the period of development.

X. In the dental follicles of macerated and doubtless syphilitic fetuses, the following alterations have been found: Endovasculitis, perivasculitis, hemorrhage, and parvicellular infiltration.

XI. The Spirochæta pallida is abundantly found in dental follicles near the so-called dental cap, in proximity to the vessels and in their walls.

XII. The dental stigmata depend upon a general morbid cause, which manifests its inhibitory action during the period of development of the tooth, *i.e.,* the second half of the intra-uterine life and the first months of extra-uterine life. Such a morbid general cause can only be syphilis.

XIII. The presence of vascular alteration and of Spirochæta pallida in the dental tissues leads us to believe that dental stigmata are of syphilitic nature and not only of indirect syphilitic origin.

XIV. The dental stigmata are of great importance for the diagnosis of hereditary syphilis, indicating the disease even before the appearance of other stigmata.

Hutchinson's teeth, the cuspal atrophy of the first permanent molar, the multiple systematic lesions of the second dentition, the multiple and systematic lesions of the first dentition, especially the cup-shaped erosions of the molars, are pathognomonic of hereditary syphilis. In twenty-three out of fifty-six cases, Hutchinson's teeth have been found.

XV. The maxillary alterations, although rather frequently found in hereditary syphilitic subjects, do not possess an absolute diagnostic value.

XVI. The specific treatment is always to be suggested in hereditary syphilitic children with dental stigmata, even if these stigmata are found alone and unassociated with other syphilitic or dystrophic stigmata.

PROPHYLAXIS.

There should be no question but that the doctor and dentist work together on the question of syphilis, which is a danger and menace to all. It is no breach of professional ethics to inform a fellow practitioner, as dentists and doctors are, of the disease in a patient under the care of both. If either discovers or suspects the infection, the duty of both is plain.

I have mentioned above that the dentist finding a definite or suspicious lesion in one of his clients should advise immediate consultation with the family physician. The dentist for his own protection should carry out the chemical prophylactic measures advised, washing with plenty of soap and water, and the application of a mercurial. Any instrument which may have directly or indirectly come in contact with the patient should be sterilized. I would advise the dentist to delay treatment of such a case until assured by the physician that the patient was no longer infectious.

If called upon to put a syphilitic patient's mouth into good condition in order that he may better tolerate mercury in the cure of the disease, the dentist should request the physician to render lesions non-infectious by preliminary doses of arsphenamin (salvarsan), or its modifications. A dentist who is doing much of this work may be justified in using a separate chair and set of instruments for these patients. The use of gloves, either with or without first covering the hands with a mercurial ointment, is an extra precaution recommended.

The dentist should sterilize his instruments after use in every instance. Patients are keen to recognize the careful dentist in this regard, and to remember proper technique to his advantage. A sterilizer should be a fixture in every dental office, but one that is utilized.

Hasseltine in his excellent paper recommends the following methods for the sterilization of dental instruments:

1. That all instruments and appliances be rendered mechanically clean by washing (with soap) in water with a brush or sponge.

2. That the following instruments and appliances be boiled or submitted to 80 deg. C. in a slightly alkaline solution (0.25 per cent. sodium hydroxid):

Artificial teeth used in matching and measuring.
Broaches.
Burnishers.
Burs.
Chip blowers.
Chisels.
Drills.
Excavators.
Explorers.
Files.
Forceps, extracting.
Forceps, foil.
Handpieces of engine.
Impression trays.
Knives and lancets.
Mallets, hand and automatic.
Mixing slabs.
Mouth gags.
Mouthpieces of saliva ejector.
Pliers.
Pluggers.
Pyorrhea instruments.
Polishing points and brushes (if not discarded after using once).
Reamers.
Root elevators.
Rubber-dam clamps, and forceps for same.
Rubber-dam weights, and metal parts of holder.
Saws.
Scalers.
Scissors.
Scratch wheels on head of engine.
Spatulas, metal.
Syringes, hypodermic.
Syringes, water.
Tongue-holding forceps.
Mirror (if 80 deg. bath to be used but not to be boiled).

3. That instruments in the above list, whose mechanical construction makes it difficult to remove excess of water, are to be placed in 95 per cent. alcohol for ten minutes to remove water, then removed and allowed to dry.

4. That only instruments with metal handles be used by dentists desiring to follow this method.

5. That the following instruments be sterilized by immersion in a 5 per cent. solution of phenol for at least sixty minutes: Mounted stones; tortoise-shell instruments; mirrors (when 80 deg. bath is not used); other instruments not of metallic nature, and which cannot be replaced by metallic instruments.

6. That instruments after using be placed in a fluid medium, preferably clear water, to avoid drying of infectious material, and to facilitate their mechanical cleansing.

7. That no instrument or appliance used on a patient directly or indirectly be used on any other patient until recommendations 1 and 2, or 1 and 5, as the case may be, have been complied with.

Among other sanitary measures, Hasseltine mentions the use of the fountain cuspidor; a sterile sleeve which can be slipped over the cable of the power-transmitting mechanism; use of foot levers for wash basins, etc.; a clean washable covering for the operating chair; and a clean cover for the headrest, renewed for each patient. The patient should brush his teeth immediately prior to coming to the chair, the dentist giving him a brush. Paper cups and towels should be used.

TREATMENT OF SYPHILIS.

Soon after the recognition of syphilis in Europe, mercury was used as a therapeutic agent. Inunction was the favorite method of use, but oral administration and, later, hypodermic injections were used. As I mentioned earlier, mercury was given to the point of tolerance, and its toxic effects were confused with the symptoms of the disease. Mercury is still used in the treatment of syphilis.

Potassium iodid was first recommended in the treatment of syphilis about 1834 by Wallace. "Jobling and Peterson have recently explained the action of iodids, as follows: The softening and removal of caseous necrotic material from a gumma is due to tryptic ferment. The gumma, however, persists and remains firm because it contains large quantities of antitryptic substances which are of lipoid nature, being combinations of unsaturated fatty acids. Their power of antagonizing the ferment depends upon their unsaturation, which in turn can, as is well known, be satisfied by iodin, this forming the basis of the well-known index used in estimating unsaturated fatty acids. Administration of iodin by saturating the antitryptic substances destroys their power over the tryptic ferments, which then dissolve the caseous material.'' (Quoted from MacCallum, ''Text-Book of Pathology,'' p. 650.)

In 1910, Paul Ehrlich (1854-1916) distributed to the heads of various syphilis clinics about the world, samples of a synthetic arsenic preparation for the treatment of syphilis. Salvarsan was the result of ''606'' experiments to produce a drug which has the greatest poisonous action on the cause of syphilis, and is, at the same time, almost harmless to the living tissue of the patient. Within a short time the results of the use of this drug in every possible manifestation of syphilis proved that a specific had been found. Although Ehrlich's idea that one dose of salvarsan would sterilize the patient, *therapia sterilisans magna*, has not been sustained, the drug is to-day our standby in the treatment of syphilis. Ehrlich did not stop with ''606'' but proceeded with experiments until ''914,'' or neosalvarsan had been produced. Just prior to his death, Ehrlich produced a newer drug called ''natrium salvarsan'' which combined the good features of both ''606'' and ''914.'' Since the war, delivery of German-made salvarsan was uncertain, and ''606'' has been manufactured in many other countries. In the United States, the generic term arsphenamin has been chosen to represent the chemical compound of ''old-salvarsan''; the term neo-arsphenamin was given to the product ''neo-salvarsan'' or ''914.''

There is agreement among syphilographers that the most effective time for producing radical results with arsphenamin is during the early period of the disease, and before the generalization which is expressed by the positive Wassermann, even before the appearance of the secondary eruption. The doses of arsphenamin administered intravenously vary according to the age of the patient, and the character of the manifestation. The ordinary doses vary from four to six decigrams. The maximum dose, six decigrams, should be given only to vigorous individuals, who are known to be tolerant to the drug. The doses of neo-arsphenamin are one-half greater than for arsphenamin. The maximum dose for this compound is nine decigrams. Different physicians use various formulæ in estimating dosage and the frequency of injection.

MEDICO-LEGAL ASPECTS.

The liability for the communication of diseases to a patient during dental operations is thus given by Noyes:

It is the duty of the practitioner while treating his patient, to use reasonable care and to employ reasonable skill not to communicate infectious or contagious diseases to the patient.

This rule applies not only to the communication of a disease from which the practitioner himself is suffering, but also to the communication by the practitioner from one patient to another. If a dentist knowing he has such a disease allows the patient to visit him without appraising the patient of the danger and without taking proper precautions on his own part, and communicates the disease to the patient, he is liable to the patient for any damage the latter suffers thereby.

Not only is he liable for damages resulting from thus communicating a disease from which he suffers, but he is also liable if he negligently transmits a disease from one patient to another, as when having treated one patient known to him to have an infectious or contagious disease he proceeds to treat another patient without warning such patient, and without taking proper precautions against the communication of the disease.

The same rule applies whether the transmission of the disease was effected through the medium of the practitioner himself, or by the use of infected instruments.—Dental Cosmos.

Dental Societies

DENTISTS IN ATTENDANCE AT THE CANADIAN DENTAL ASSOCIATION CONVENTION, OTTAWA, AUGUST, 1920

J. W. Ault, Prescott, Ont.; H. R. Abbott, London, Ont.; R. M. Armstrong, Ottawa, Ont.; W. A. Armstrong, Ottawa, Ont.; J. A. Armstrong, Ottawa, Ont.; W. S. Allen, Sherbrooke, Que.; R. M. Box, Carleton Place, Ont.; K. Barry, London, Ont.; F. H. Bradley, Sherbrooke, Que.; W. M. Box, Kitchener, Ont.; T. H. Barry, Ottawa, Ont.; A. Beauchamp, Montreal, Que.; W. J. Burtley, Sarnia, Ont.; H. H. Beckwith, Halifax, N.S.; G. A. Beattie, Ottawa, Ont.; J. S. Bagnall, Charlottetown, P.E.I.; H. E. Bewell, Dauphin, Man.; J. A. Bothwell, Stratford, Ont.; F. H. A. Baxter, Montreal, Que.; J. A. Butler, Cookshire, Que.; J. A. Bothwell, Toronto, Ont.; A. A. Black, Toronto, Ont.; G. H. Bush, Winnipeg, Man.; S. W. Bradley, Ottawa, Ont.; A. T. Colvin, Ottawa, Ont.; W. B. Cavanagh, Cornwall, Ont.; A. A. Campbell, Vancouver, B.C.; A. Chevrirs, Montreal, Que.; Col. B. Clayton, Ottawa, Ont.; O. S. Clappisin, Hamilton, Ont.; G. S. Cameron, Montreal, Que.; W. S. Chartrand, Ottawa, Ont.; M. T. Cross, Ottawa, Ont.; H. A. Chartrand, Ottawa, Ont.; R. H. Cosgrove, Ottawa, Ont.; J. T. Coupol, Ottawa, Ont.; J. W. Clay, Calgary, Alta.; W. A. Cowan, Regina, Sask.; A. Conture, Ottawa, Ont.; F. J. Conboy, Toronto, Ont.; J. S. Dohan, Montreal, Que.; Walter Dalzell, Portage la Prairie, Man.; L. Doran, Montreal, Que.; Philippe Dewers, Verdun, Que.; C. Dent, Ottawa, Ont.; J. G. Dinnont, Buckingham, Que.; E. Dubean, Montreal, Que.; R. L. De Rosiers, Ottawa, Ont.; W. B. Daynard, Carman, Man.; S. S. Davidson, Ottawa, Ont.; E. M. Ely, Ottawa, Ont.; W. R. Eaman, Ottawa, Ont.; J. A. Fleming, Prescott, Ont.; Paul Fouriers, St. Hyacinthe, Que.; S. Feldman, Montreal, Que.; S. S. Gaudreau, Quebec, Que.; J. G. A. Gendreau, Montreal, Que.; W. R. Greene, Toronto, Ont.; G. M. Gorrell, Morrisburg, Ont.; A. R. Graham, Boissevain, Man.; A. Genton, Montreal, Que.; W. H. Graham, Ottawa, Ont.; O. K. Gibson, Ottawa, Ont.; E. A. Grant, Toronto, Ont.; J. S. Girvin, Ottawa, Ont.; R. M. Graham, Ottawa, Ont.; Wm. J. Hill, Alliston, Ont.; A. N. Hill, Dundas, Ont.; A. M. Hoonson, Montreal, Que.; E. A. Hill, Sudbury, Ont.; E. R. Howes, Brandon, Man.; A. R. Hynes, Renfrew, Ont.; T. C. Husband, Toronto, Ont.; E. A. Higley, Chatham, Ont.; O. H. Hutchison, Ottawa, Ont.; T. D. Higginson, Ottawa, Ont.; J. R. Hand, Ottawa, Ont.; H. C. Hodgson, Winnipeg, Man.; J. W. Ingram, New Toronto, Ont.; K. Johnson, Winnipeg, Man.; Emery Jones, New Westminster, B.C.; J. E. Johnston, Hamilton, Ont.; W. Johnson, Almonte, Ont.; C. H. Juvet, Ottawa. Ont.; A. E. Knapp, Kingston, Ont.; M. Kolber, Montreal, Que.; J. J. Lonergan, Ottawa, Ont.; J. P. Lantier, Montreal, Que.; E. Lapointe, Montreal, Que.; R. R. Larmour, Ottawa, Ont.; E. L. Lafond, Hull, Que.; J. H. Lumsden, Ottawa, Ont.; J. J. Leacy, Ottawa, Ont.; J. A. Lambertus, Eganville, Ont.; W. H. Liddle, Ottawa, Ont.; A. La Rocque, Montreal, Que.; T. L. Larsennes, Montreal, Que.; R. H. Laying, Kerrobert, Sask.; J. A. Lockeed, Hamilton, Ont.; B. Lightstone, Montreal, Que.; O. A. Marshall, Belleville, Ont.; F. W. Martin, Moose Jaw, Sask.; J. G. Montgomery, Ottawa, Ont.; W. J. Mooney, Regina, Sask.; Fred. Mallory, Toronto, Ont.; T. K. Mills, Tilbury, Ont.; J. W. Moore, Lacome, Alta.; R. Mowry, Montreal, Que.; A. H. Mabee, Gananoque, Ont.; L. M. Mabee, Goderich, Ont.; A. F. Marrow, Maxville, Ont.; O. Martin, Ottawa, Ont.; V. H. Macaulay, Calgary, Alta.; H. J. Merkeley, Winnipeg, Man.; F. P. Moore, Hamilton, Ont.; R. S. Monk, Peterboro, Ont.; C. F. Morison, Montreal, Que.; Frank Mendel, Montreal, Que.; A. A. McPhee, O'Hana, Ont.; E. F. McGregor, Almonte, Ont.; A. C. McKenna, Ottawa, Ont.; H. A. McRea, Sherbrooke, Que.; A. E. McCordick, Ottawa, Ont.; J. L. McLean, Havelock, Ont.; R. J. McCallum, Alexandria, Ont.; J. M. McIntyre, Ottawa, Ont.; J. O. McCullough, Perth, Ont.; J. B. Morrison, Montreal, Que.; S. A. MacSween, Montreal, Que.; C. W. McBride, Smith's Falls, Ont.; M. M. McKay, Pembroke, Ont.; J. M. Magee, St. John, N.B.; E. S. McBride, Woodbridge, Ont.; R. A. McGillivray, Winnipeg, Man.; K. M. McVey, Toronto, Ont.; L. E. MacLachlan, Ottawa, Ont.; A. J. McDonagh, Toronto, Ont.; M. G. McElhinney, Ottawa, Ont.; A. J. MacMillan, Hull, Que.; W. C. Macartney, Ottawa, Ont.; S. G. McCaughey, Ottawa, Ont.: J. A. McMurdo, Summerside, P.E.I.; N. B. McLenaghen, Portage la Prairie, Man.; C. S. McLean, Cardinal, Ont.; A. W. McClelland, Montreal, Que.; R. G. McLean, Toronto, Ont.; G. H. McKeown, City View, Ont.; J. Nolin, Montreal, Que.; Otto Nase, St. John, N.B.; C. C. Nash, Kingston, Ont.; J. C. Nichol, Perth, Ont.; R. B. O'Sullivan, Ottawa, Ont.; E. J. O'Leary, Ottawa, Ont.; K. P. O'dell, Montreal, Que.; W. C. Oxner, Halifax, N.S.; E. W. Oliver, Ottawa, Ont.; A. A. Pinard, Ottawa, Ont.; B.

A. Plenet, Farnhen, Que.; H. H. Pearson, Montreal, Que.; R. F. Price, Ottawa, Ont.; Z. M. Paterson, Ottawa, Ont.; P. Proudfoot, Russell, Ont.; H. A. Robertson, Hamilton, Ont.; E. F. Risdon, Toronto, Ont.; T. Regnier, Rockland, Que.; G. S. Richardson, Ottawa, Ont.; T. W. Ryan, Halifax, N.S.; R. B. Robertson, Cornwall, Ont.; J. A. Sanders, Kemptville, Ont.; W. Saint Pierre, Montreal, Que.; E. A. Shaver, Brockville, Ont.; D. H. Stewart, Montreal, Que.; J. A. Slade, Toronto, Ont.; O. C. Sprath, Ottawa, Ont.; U. B. Shantz, Kitchener, Ont.; S. J. Schachtan, Montreal, Que.; S. W. Sproule, Ottawa, Ont.; W. J. Sanders, Brandon, Man.; H. A. Stewart, Kingston, Ont.; A. A. Smith, Cornwall, Ont.; A. M. Strang, Montreal, Que.; W. Seccombe, Toronto, Ont.; A. S. Solomon, Montreal, Que.; T. W. Saunders, Montreal, Que.; A. Slone, Ottawa, Ont.; W. A. Sangster, Port Perry, Ont.; H. W. Snow, Moncton, N.B.; T. Smith, Langdon, Ont.; F. B. Sparks, Kingston, Ont.; A. V. Summer, Ottawa, Ont.; L. P. Strean, Montreal, Que.; G. K. Thomson, Halifax, N.S.; A. W. Thornlon, Montreal, Que.; W. G. Thompson, Hamilton, Ont.; L. Thompson, Perth, Ont.; M. A. Thompson, Ottawa, Ont.; R. D. Thornton, Toronto, Ont.; A. J. Thomas, Victoria, B.C.; J. E. Taggart, Ottawa, Ont.; T. L. Williamson, Hamilton, Ont.; H. Winters, Ottawa, Ont.; S. C. Wilson, Perth, Ont.; H. L. Watt, Ottawa, Ont.; A. E. Webster, Toronto, Ont.; H. F. Whittaker, Edmonton, Alta.; D. D. Wilson, Kingston, Ont.; G. F. Wright, Trenton, Ont.; M. A. Woodrow, Brockville, Ont.; Frank Woodbury, Halifax, N.S.; E. R. Young, Ottawa, Ont.; E. R. Zimmerman, Toronto, Ont.

The guests were: Dr. Luis Subriana, Madrid, Spain; Dr. Tom Smith, Langdon, N. Dakota; Dr. A. Barrie, New York City, N.Y.; Dr. Clarence J. Grieves, Baltimore, Md.; Dr. W. Clyde Davis, Lincoln Neb.; Dr. Jas. R. Macdonald, Philadelphia, Pa.; Dr. Earl Brooks, Noblesville, Ind.; Dr. E. C. Kirk, Philadelphia, Pa.; Dr. Hassell, Tuscalosa, U.S.A.

The next annual meeting of the American Institute of Dental Teachers will be held at the Claypool Hotel, Indianapolis, Ind., January 24th, 25th and 26th, 1921.

The program will contain much of interest in dental teaching methods and dental educational affairs. A cordial invitation is extended to all ethical practitioners and others interested along these lines to attend the sessions.

Dr. Arthur D. Black, Secretary.

381 Linwood Ave., Buffalo, N.Y.

Editorial

EDITOR:
A. E. Webster, M.D., D.D.S., L.D.S., Toronto, Canada.
ASSOCIATE EDITORS:
ONTARIO—M. F. Cross, L.D.S., D.D.S., Ottawa. Carl E. Klotz, L.D.S., St. Catharines.
QUEBEC—Eudore Debeau, L.D.S., D.D.S., 396 St. Denis Street, Montreal; Stanley Burns, D.D.S., L.D.S., 750 St. Catherine Street, Montreal; A. W. Thornton, D.D.S., L.D.S., McGill University, Montreal.
ALBERTA—H. F. Whitaker, D.D.S., L.D.S., Edmonton.
NEW BRUNSWICK—Jas. M. Magee, L.D.S., D.D.S., St. John.
NOVA SCOTIA—Frank Woodbury, L.D.S., D.D.S., Halifax.
SASKATCHEWAN—W. D. Cowan, L.D.S., Regina.
PRINCE EDWARD ISLAND—J. S. Bagnall, D.D.S., L.D.S., Charlottetown.
MANITOBA—M. H. Garvin, D.D.S., L.D.S., Winnipeg.
BRITISH COLUMBIA—H. T. Minogue, D.D.S., L.D.S., Vancouver..

VOL. XXXII. TORONTO, NOVEMBER 15, 1920. No. 11.

THE NEW EXCISE TAX

Dentistry in Canada is in a queer position just now because of a special tax being levied on manufacturers. The various Provincial Legislatures have given members of the profession of dentistry a license to practice, and now the Inland Revenue officers of the Dominion demand that a license be obtained to manufacture (what shall we say, dental services) or be subject to a fine not to exceed one thousand dollars. The legislatures and the practitioners of dentistry have thought that dentists were professional men and not in trade, commerce or manufacturing, but the interpreters of the Inland Revenue regulations think otherwise. In the opinion of these officers, dentists are manufacturers and as such must take out an annual license to avoid a fine. Dentists who sell fillings at so much per come mighty close to being in trade, though they do not manufacture any more than the physician who rolls up pills for his patient.

There are two sections of the new Excise Taxes Act which are being applied to dentists, one for dealing in manufactured goods and the other for manufacturing. The selling of goods does not apply because it says, "Every person selling or dealing in the articles upon which taxes are imposed as prescribed by this section," etc. Nothing pertaining to dentistry is mentioned. The section on manufacturing says, "The minister may require every manufacturer and wholesaler to take out an annual license for the purposes aforesaid and may prescribe a fee therefor not exceeding five dollars, and the penalty for neglect or refusal shall be a sum not exceeding one thousand dollars."

Throughout the Dominion there are various interpretations of the regulations. In some places a tax is expected from all dental operations; others only those operations performed for a patient in his absence, while in others dental operations are classed with those of the surgeon upon which no tax is charged. The Act enumerates many things upon which there is no tax, among these being gold and silver ingots, sheets, drops, etc., and artificial limbs. Why not artificial teeth? People who have lost their teeth are often more permanently disabled than those who have lost a foot.

The executive of the Canadian Dental Association, together with representatives of the provinces, are asking for an interview with the authorities at Ottawa with a view to having an interpretation of the Excise Act which will place dentistry as a profession.

Dentists do not object to paying their fair share of taxes, but they do object to being classified as either tradesmen, wholesalers, jobbers or manufacturers.

DENTISTRY FOR THOSE OF LITTLE MEANS BY A DENTAL COMPANY

At Bournemouth, England, is a unique dental service. A dental company was formed from all the dentists in the city. A building equipped for dental service was rented, and a janitor and trained nurse engaged. Four equipments were installed. Each dentist visits once a week, two and a half hours. The surgeries open at 9 a.m. to 7 p.m. Patients are treated as in a private practice, except that there is no credit. The management is vested in a committee composed of the directors of the company of which there are five. Only patients unable to pay full professional fees are accepted.

The amount of the fee depends upon the ability of the patient to pay. Class A, married, income 50s per week people

1st with 7 dependents pay for extractions 1 shilling, fillings 2s 6d., gas 5s., local 2s. 6d. If only 1 dependent double except for gas, which is the same.

Class B, 40s. per week, Class 1, same as above if 7 dependents, but if 1 or 2 dependents extracation is 1s. 6d.

Class C, 30s. per week, slightly less than Class B.

All fees earned are paid into revenue account. After meeting expenses 5 per cent. is paid on the capital invested and any balance remaining is paid pro rata to the members. The profits over expenditure run from 56 per cent. to 67 per cent. The business of the company is run more economically than most dental offices when the low fees are taken into consideration.

Editorial Notes

Our editorial in the September issue of the Dominion Dental Journal, criticizing the Dental Service regulations of the Department of Soldiers' Civil Re-establishment, was written "not in anger, not in wrath" but to emphasize the absurdity of placing the practice of dentistry under the control of individuals devoid of dental training.

⁂

We are now in receipt of a copy of the S. C. R. Dental Procedure which was amended on the 27th of October, 1920, and are very pleased to note that the subordination of the dental to the medical profession no longer exists. The links of the chain of responsibility are all dental and the Director of Dental Services is responsible directly to the Deputy Minister.

Nov. 3rd, 1920.

Dear Dr. Webster:

A certain medical practitioner in this town has been trying to cure pyorrhœa with some kind of an electric apparatus that he saw used by some dentist or medical practitioner, I don't know which.

I cannot understand for the life of me why a medical doctor who has never seen the inside of a dental college should try to cure pyorrhœa by some apparatus that he saw used overseas or elsewhere.

If the law permits him to work on people's teeth, then of what use is a dental education? As far as I can see I have as much authority to go with some doctor on a maternity case, watch the operation and then go and perform the operation myself as a medical practitioner has of doing operations on people's teeth. I don't know what the law is regarding this matter, but I would like to know what you think of it.

I am, yours fraternally,

A. E. B.

HAMILTON DENTAL SOCIETY

At the annual meeting of the Hamilton Dental Society, held in the Royal Connaught Hotel, the following officers were elected for the ensuing year: Honorary president, Dr. J. N. Stewart; president, Dr. H. M. Morrow; vice-president, Dr. J. A. Locheed; secretary, Dr. W. H. McLaughlin; treasurer, Dr. W. J. McEwen; educational committee, Dr. W. G. Thompson, Dr. F. L. Williamson, Dr. C. G. McLachlan; entertainment committee, Dr. F. P. Moore, Dr. H. A. Robertson; Dr. J. E. Johnston; nominating committee, Dr. R. T. MacDonald, Dr. R. H. Cowen, Dr. F. P. Moore; program committee, Dr. J. A. Locheed, Dr. O. S. Clappison, Dr. W. H. McLaughlin; ethics committee, Dr. J. N. Stewart, Dr. C. M. Ross; auditors, Dr. Franklin Hansel and Dr. G. Nicholson.

DOMINION DENTAL COUNCIL EXAMINATIONS, 1920

The following have passed in medicine and surgery:—

W. M. Box, H. G. Brownlee, H. M. Brown, G. A. Buttery, C. C. Clermont, L. H. Croft, B. R. Coysh, J. G. Countryman, G. C. Caldwell, V. A. Clark, B. J. Charles, J. C. Doore, H. R. Day, W. Ewart, R. F. Fralick, J. E. Fraser, C. C. Graham, G. A. Gemeroy, J. A. Graham, N. W. Haynes, J. H. Herrington, M. J. Heney, P. C. Hughes, W. L. Hugill, E. J. Hesson, F. W. Johnson, C. T. Moyle, H. E. Mann, F. G. Mann, W. R. Morrison, J. D. Morrison, L. E. McLachlan, H. McCrostie, J. A. Milne, F. J. Moffatt, W. J. H. Miller, R. R. McIntyre, R. C. McLaughlin, A. M. Palmer, W. A. Pommer, J. W. Pickard, H. A. Ross, C. E. Stewart, H. E. Smith, C. M. Trueman, P. H. B. Wood, W. R. Wilkes.

(Signed) W. D. Cowan.

Dominion Dental Journal

Vol. XXXII. TORONTO, DECEMBER 15, 1920. No. 12.

Original Communications

THE RELATION OF THE GENERAL PRACTITIONER TO THE SPECIALIST IN DENTISTRY

Address Delivered before the Ottawa Dental Society by A W. Thornton, Dean of the Faculty, McGill University, Montreal, October 26th, 1920.

(Continued from November Issue.)

DISCUSSION.

Dr. M. G. McIlhenny: I have listened with a great deal of interest to Dr. Thornton's paper, because the subject is one of the utmost importance, and I am not aware of there being anyone more capable of handling it than Dr. Thornton. Of course, I do not desire to throw any bouquets in his direction, because no doubt the position which he now holds, as one of the foremost men in the profession to-day, is due to the influence of some of those chaps whom he had to rub up against in college, and who were continually stepping on his pet corn and arousing his intellectual activity to an extent that otherwise might not have been the case.

There is no question about the sound sense and the ability with which Dr. Thornton has handled this subject. It must have come home to a great many of us, particularly those of us who have been a long time in what is known as general practice, and keeping an eye open all the time for what is going on in the profession—it must have come home to us that there is something important lying beneath this influx of specialties in our own profession. Now, there is no doubt that some of these specialties are highly necessary. Some of us who attempted orthodontia twenty or thirty years ago were met with two very difficult conditions. One was the physical impossibility of carrying on the work of orthodontia and doing any other kind of work at the same time, and the other was the fact that at that time the public had not awakened to the value of that sort of service, and the fee obtainable was a very small percentage of that attainable to-day for that kind of work. We were unable to obtain any sort of reasonable fee for the time expended on these cases. A certain case might keep us busy and awake nights during one year or two years or more, and if we got a paltry $50—well, we did not feel that we were well paid, but that is all we would get. I remember rendering an account for that amount once to a well-known and well-to-do family in the city after about two years' hard work, and getting a letter in reply stating that the charges were exorbitant—and I never saw any member of that family since. Just about that time the specialty emerged, and I said: "That is all I will have to do with it; I will never touch orthodontia again; the specialists will be able to obtain what they deserve for their work." I think that attitude on the part of a great many of us had much to do with bringing about the practice of orthodontia as a specialty. When a case presents itself now—well, if I should say "$500 for this," there would be a very wide opening of eyes and that sort of thing; so I just send that case to my friend the orthodontist, and he knows how to deal with it. So that a great burden has been lifted from the general practitioner, a burden which we are all extremely thankful to get rid of, because, as I said before, we all know that one cannot carry on two or three cases of orthodontia and attend to the other work of the office at the same time; it is a physical impossibility.

There was a time when a man could rent a hall in the business section of the city and maintain two or three operating rooms and a complete equipment necessary to the various branches of the work, at very small expense. To-day, the difficulties which present themselves if a man tries to do that are obvious. We have reduced our office space as much as possible. We cannot have retiring rooms and operating tables and that sort of thing, and that makes it undesirable that we should deal with anaesthetic cases and work of that nature; we cannot do it in a small office. Consequently, it is a splendid thing to have the exodontist with his completely equipped establishment for that purpose, and we cheerfully send these cases to him. The treatment of these cases requires space and requires time; the two or three hours that the case might take would be a dead loss to the general practitioner.

Now, this is probably nothing more than a re-hash of what Dr. Thornton has already told you in better language, but I merely state it as corroboratory of his views on the subject. I do believe that the two specialties which he has mentioned are perfectly legitimate and of great assistance to the general practitioner. As to some of the others—well, I would imagine that replacements, crown and bridge work, are all lines of legitimate dentistry; that any dentist should be able to do that work. Otherwise, what becomes of dentistry? What becomes of the profession if we take from it those essential things, replacement work and the treatment and filling of teeth? Now, a great many men have found out that ordinary filling, the destroying of pulps, and so on, takes a great deal of time, and some believe that it is the least paying branch of the profession to-day. I suppose that the public is being educated so that it is willing to pay a better fee for these operations, but until very recent years people were not willing to pay an adequate fee for fillings, and that no doubt led some men, and justly so, to leave that work to someone else. Still, I think there is room in the profession to-day for the general practitioner, and that for most of the branches of our work we should stick to them generally.

These remarks have not, perhaps, been very enlightening, but they are the outcome of my experience in the matter. That experience may not have been so great as others have had, but it has led me to these opinions on the subject.

Dr. C. H. Juvet: Mr. Chairman and gentlemen, I suppose that as the pioneer of orthodontia in this part of the country I would be expected to make some remarks in regard to Dr. Thornton's paper; I wish it were left to someone who would do him greater credit.

I have listened to Dr. Thornton's remarks with a very great deal of interest, because the subject is one that has occupied much of my own serious attention—the relationship of the general practitioner to the specialist. I have read every article I have seen published on the subject, but Dr. Thornton has presented the relationship between the specialist and the general practitioner from a different angle; he has treated it in a way quite different from that in which it has been treated in anything that I have listened to or read about.

Dr. Thornton said many things that are only too true. One of the remarks he made impressed me very strongly in connection with my specializing in orthodontia; it was that limiting yourself to the practice of one department of dentistry must necessarily and does narrow you. That I have found to be a misfortune. Dr. Thornton quoted the biblical saying, "As a man thinketh in his heart so is he;" and being more interested in orthodontia than anything else, I have devoted my attention more particularly to that subject than to any other subject in connection with dentistry. I engaged in general practice for nine years before I took up the specialty —my leaving general practice was more largely due to ill health than anything else—and I feel more and more now when patients approach me for an opinion that I am simply unable to give opinions on a subject connected with the general practice of dentistry; I have to refer them to someone who is engaged in general practice. In that way I feel that I am somewhat narrowed; that I have not as broad a view of the general practice of dentistry as I should possess.

The relationship of the specialist to the general practitioner is a subject that has to be handled in many different ways. The specialist is thrown into so many different relationships with the general practitioner that it is very difficult to come to any conclusion as to how any one man should proceed in the matter. As I say, I have listened with very great interest to Dr. Thornton's address; I must compliment him upon the manner in which he presented the subject to us—a manner which has not been excelled by anything I have ever heard or read. (Applause.)

Dr. Oliver Martin: Mr. Chairman and gentlemen: Dr. Thornton has dealt with this subject in a most interesting manner, but we could hardly expect anything else of him. I have known Dr. Thornton now for many years. When he was a member of our class, if I remember rightly he was the leader of it; he was our class president: so I think that perhaps we got more enthusiasm and incentive from him than he got from us. However, that is by the way.

With regard to specialties and specializing, I may say that I never call myself a specialist, because I am doing what all the other dentists are doing. After working for a great many years, very hard and very conscientiously, I acquired a large volume of practice; my work was very arduous and the strain upon me was very great. Well, I found that in order to eliminate some of the work I would have to do one of two things: one was to discriminate against my patients; the other was to discriminate against the work I was doing. Now, to discriminate against my patients would be a rather delicate thing for me to do, because some of my patients—I suppose any old practioner would be able to say the same thing—had stood by me when I needed their help, and if I were to discriminate against them I would be doing a rather mean thing—that is my candid opinion. I had to do that or do something else to get rid of the extra work, so I decided that the work I liked the best, the particular branch of the work that I could do the best, was the work I would like to specialize in. So a few years ago I sent out cards to all my patients announcing that from a certain date, the first of the ensuing year, I would devote my entire time to the prosthetic side of the work, mentioning crown and bridge work and plate work particularly. Well, when I started to send out those cards, I thought that I probably would have about 500 patients, but I soon found that I had fifteen hundred patients; so that explained the situation to me. When I would get 500 patients all fixed up, the other 500 would need attention, and by the time I got that 500 fixed up pretty well the first 500 were back at me again, so there was no getting out of it. That is why I devote my time now to this particular work—not that I think I can do it better than other men, but because I think that if a man concentrates his attention on one particular line of work, he is bound to do better because he is thinking along those lines all the time.

What Dr. McIlhenny said about office room is a very important point to be considered. We used to have an extracting room in our office and a place to which we could take patients, so that if there was any noise it would not be heard. But in the modern office the general practitioner who has patients in the waiting room does not like to do extracting under an anaesthesia. In fact, the operating chair is not a good chair to use for that purpose; one should have a proper equipment for the work. Now, in any line of work, if you are devoting your attention entirely to one specialty, you will study your equipment more thoroughly and try to improve it—more so than if you were doing general work.

For my part, it is very comforting to be able to send to a specialist a patient who requires treatment which that specialist is particularly qualified to afford. It is a fine thing, in a case where pyorrhea is manifest, to be able to send the patient to a man who will give him better service than you can possibly render. For the treatment of these special cases you have to have equipment, and the general practitioner is not likely to have sufficient equipment to handle these particular cases.

I do not know that I can throw any new light on the subject so admirably dealt with by Dr. Thornton. I am convinced of one thing: that the specialist has come, and he has come to stay.

Dr. Sydney W. Bradley: Mr. President and gentlemen: One of the commandments says: "Thou shalt not covet"—I do not know which one it is; but every time I hear Dr. Thornton I covet his ability as an orator. That is a gift with which few of us are blessed; it is God-given, though I suppose it is increased and developed with practice and concentration. But there are many of us who may have a few ideas when we are sitting down, and when we get up on our feet we say something that we did not intend to say at all; the ideas we intended to express are gone.

I enjoyed Dr. Thornton's paper very much. I think he expressed the right idea about the specialist. As to the reason why I went into orthodontia—well, I liked it better than anything else; I liked the children. My father was a blacksmith. He used to work in very heavy wire, bending it and threading it—and he was "some" blacksmith. I saw him make appliances—not once or twice or three or four times, but on many occasions—for the straightening of children's limbs, fashioning them out of steel. I don't know whether or not I had something of that born in me; possibly it is one of the reasons why I took so kindly to orthodontia. I think I have the models yet of the first few cases I handled—and they were all right; they were fine. The next few cases that I did—well, I would be ashamed to show them to anyone present; I think they were worse when I finished than when I started. As a result of that I had to get down to work. I think that the first cases were a success in spite of me. Then I had to find out the reasons for the ill-success of the others. Dr. McIlhenny spoke of fees for orthodontists and for specialists. I remember when I was in Richmond I did a case for a wealthy farmer there; and I am going to tell you exactly what happened. I did a case of orthodontia for $85 for this wealthy farmer's wife. I did other cases for $50. When this lady whom I had charged $85 found out that other ladies had paid only $50 for the work I did for them, she came in and gave me the mischief—I had overcharged her; it was awful. When I came to the city and started the practice of orthodontia she had a little girl; she brought her in to me, and one of the first things she asked me was how much that case would cost. I said: "That will cost you $250 or $300." Of course, she didn't get it done. (Laughter.)

But specialists have come to stay, because certainly the public are willing to pay the price for that special work. I do not think the specialist makes so much more money than the good general practitioner. The question of success lies in the man himself; if he will succeed in general practice, he will succeed in the practice of a specialty; if he does not succeed in general practice, he will not succeed in the specialty. Dr. Thornton referred to the oral surgeon. That is a specialty common in dentistry, and if the man who takes up that specialty has the M.D. degree as well as the D.D.S., all the better. But the trouble is that when a man gets the M.D. degree and the D.D.S. he is an M.D., he is not a D.D.S. One of the most famous oral surgeons—I have heard this said by Dr. Dewey and some other men who were very famous orthodontists—pointed out that the M.D. who practices oral surgery and treats cleft palate cases often leaves the child in a worse condition after the permanent teeth have erupted than if he had not operated at all. Another specialist who is only a D.D.S.—and I believe we get sufficient preliminary training in our colleges—can develop into an oral surgeon; he does not need the degree of M.D. at all. He can follow on from what he got at college and he can do anything in oral surgery. He knows articulation, and he is in a position to work to bring about such results that when the permanent teeth erupt they will be a credit to him.

As to the periodontist, I think he has come to stay, because the successful treatment of periodontia means time, much time; it means the use of special instruments; it means the keeping of those instruments in perfect condition—and the general practitioner has not time to do that. I think any general practitioner may achieve satisfactory results if he takes the time and grasps the underlying principle that it is a question of surgery, root surgery, and that all the drugs that were ever invented will not cure pyorrhea, so far as we have learned up to the present time. Surgical treatment is required to ensure success, and the great factor is time.

I do not think I have any further remarks to make; I have very much enjoyed Dr. Thornton's paper.

Dr. E. W. Oliver: Mr. Chairman, Dr. Thornton made reference to the existence of a great variety of specialists in connection with dentistry. There is one that he has not mentioned; perhaps he has never heard of it or come in contact with it. A gentleman who was in the office the other day asked me what a "periodist" was, remarking that he understood it to be a specialty of dentistry. I said: "I am sure I never heard of it." He said: "Well, I was walking down the street not long ago and I saw printed on a card in a window the word 'Periodist.'" I said: "Oh, you mean 'Periodontist'?" "Oh yes," he replied, "that is it—periodontist."

Now, I think I may safely say that we have all listened with a great deal of profit and pleasure to Dr. Thornton's address to-night. It has been very interesting and very instructive to all of us, and I think it would be unfortunate if only those who are here were to profit by it. In order that his address may come before a greater number of dentists throughout Ontario and Canada, I would move that the proceedings of the Ottawa Dental Society to-night, together with the report of Dr. Thornton's address—with his consent—be forwarded to the magazine ORAL HEALTH and to the DOMINION DENTAL JOURNAL, for publication by them for the benefit of dentists throughout the province and the Dominion generally.

DR. ELY: I second Dr. Oliver's motion.

The motion was carried unanimously.

DR. S. DAVIDSON: Mr. President, I have on very many occasions envied the specialists, but to-night I am glad I am not one of them, because, from the very nature of the discussion, they are supposed to give some reason to justify their existence. Although they have found it very difficult to do so, still, they have risen to the occasion in a noble manner.

I think whoever is responsible for Dr. Thornton's visit to-night must receive credit for carrying out a very happy idea; he has given the Ottawa Dental Society a very enjoyable evening. I could not help thinking, while I was sitting here listening to Dr. Thornton and looking at him—and we cannot help looking at him—(laughter)—that I was born a little too soon; I was just wishing I could be a student again and sit under Dr. Thornton and have the benefit of his teaching, to say nothing of being able to look at that face of his—so earnest; so kind.

Last winter I was in Chicago and I called on my old college chum, Dr. C. N. Johnston. He held my hand for quite a few minutes, and he said: "Sam, I am delighted to see you. There are two faces from Canada I always like to look at, yours and Thornton's."

DR. THORNTON: They are so much alike.

Dr. Davidson: He said:: "They are such big, red, healthy faces." He didn't call them handsome, but he said "red," I know that. (Laughter.) He said: "Of course, you fellows can't help those faces; they are the only ones you have; but I do love to look at them." "Well," I said, "Charlie, I do hope that the red in Thornton's face is not from the same cause as the red in mine, because he is a Methodist and it is against the rules of his church." I am only a Scotch Presbyterian; that and oatmeal are two of the genuine tenets of our faith.

I have enjoyed very much Dr. Thornton's paper this evening; the subject is a very timely one. I am quite in accord with his remarks regarding the general practitioner, that he should cover everything he possibly can in the line of dentistry. Personally I try to do everything except the two specialties that he has mentioned, that is, orthodontia and oral surgery, the treatment of cleft palate and hare-lip. The reason is very obvious, I must confess; I do not do them because I do not know anything about them and would make an awful mess of them if I attempted to engage in that work. But otherwise I try to do everything that my patients present themselves for. I do it as a sense of duty. When my patients apply to me for service, if I cannot give that service in a successful manner, I have no business to be there.

Dr. M. F. Cross: Mr. Chairman, I would not like this occasion to pass without paying my tribute of appreciation to Dr. Thornton for his splendid address I always lose a good deal of Dr. Thornton's addresses in watching his manner; nevertheless, I do remember some of the things he says; I even remember some of the things he said to-night. I have known him for a great many years, and we have been good friends—so far as I know. He never did anything to me that I know of, and I have never desired to injure him. His attitude is characterized by a particular kind of fire; he creates an atmosphere; his enthusiasm is infectious. I have been infected in that way. I go to church—not too often; not enough to hurt me—and sometimes I get carried away with a man's manner and I quite forget the lesson; couldn't tell you all about it when I get home. I can say to Dr. Bradley that my father was not a blacksmith and never straightened legs, but many a time he straightened the humps on our backs, sometimes almost at the expense of our limbs.

Well, I do not want to thresh old straw. We all recognize —it has been iterated and reiterated here to-night— that it is futile to try to do all the different kinds of work that we are called upon to do. The orthodontist is our first refuge; he saves us a lot of trouble and humiliation. I remember that Dr. Juvet used to give us papers and demonstrations on how to be a general practitioner and be an orthodontist. I do not know what his motives were, but he got in right with us all and we were very glad to turn our work over to him.

Dr. Thornton referred to post-graduate work in the extraction of teeth. Probably no branch of dentistry has progressed so little as extraction. People extract teeth to-day as barbers and blacksmiths did many years ago—just lift them out and leave these big craters, and they think the work is all done. There is a lot of subsidiary treatment in connection with extraction. We leave great, sharp edges of process to stick through the gums; the patients come back to have us clear out the roots, and so on. I think these points should be stoned off under an anaesthesia before they come out and the sockets treated. I really think that extraction is not much better done than it was many years ago.

I do not wish to take up any further time, because I do not want to repeat things that have already been said. There is the trouble, you see; nearly everything has been said that can be said on the subject; these other fellows have got ahead of us. But before I resume my seat I wish again to express my appreciation not only of the matter contained in Dr. Thornton's address, which I remember probably more than I pretend, but of the manner in which the essayist of the evening delighted us. (Applause.)

Dean Thornton: I shall not take up much of your time. Let me say first that I can appreciate the viewpoint expressed by Dr. Martin and entertained by many of the rest of you that these things grow upon you. Sometimes it is an advantage to be able to stand off and view a thing from a distance; you get a better perspective than when you are up too close.

Throughout almost the whole of the world to-day we hear something about the question of brotherhood. We need to take very seriously to heart in our own profession the desirability of manifesting the spirit of brotherhood. In the larger centres men get closer together than they do in the smaller places; there are always local jealousies; professional jealousies. Now, you men who have too much practice to-day, hand it over to some of the younger men who are coming in and who have not too much to do. Not only do that, but help the young men through study clubs; through organizations where the men can get together and discuss technique as you sit there around a table. Of course, you must be willing to pay the price.

Some of you were at the meeting in Chicago two years ago, which was attended by about eight thousand dentists. You will remember that a monument was erected to Dr. Black. But the greatest monument erected to Dr. Black was not the one that is in Lincoln Park; the greatest monument was found in the hotel where the meeting was held. There was a large room filled with the things that Black had done during his life, the evidences of his skill and the results of his work; the books that he had written and the instruments that he had perfected. Think of the life that that man led; yet he was a very happy man. Think of the work that he did; of the monument that he erected for himself. Most of us are not fond enough of work; we could be a great deal more valuable to the profession and to the world, if, perhaps, we spent a little more time at home reading and studying and working out some of these problems. Then, when your practice gets so large that you say: Here, I cannot do this—hitch yourself up with some fellow and carry out some of the principles of the Big Brother movement. Not very long ago I attended a meeting of the Rotary Club here. I do not remember whether I saw any of you fellows there; I do not know whether or not any of you belong to it. But the Big Brother movement is a great movement, and one that is particularly furthered by the Rotary and Kiwanis clubs. Get it into your Society here.

Now, as to the question of extracting under a general anaesthetic. Just here this case comes to my mind: A surgeon called me up and said: "There is a man that I want you to see in the hospital." So the man was brought down to the hospital. The trouble was a very simple one; somebody had tried to extract a first upper bicuspid and had broken it. He tried to get the root out, but he could not do it. The dentist said frankly: "I cannot get this out. There is no use in me trying to do it, because I am not a very good extractor; I think you had better get somebody else." Now, there is one thing about hospital work: If a man has a case that is not a very nice one he advises the patient to go to the hospital; the case is loaded on us and we have to attend to it, because it would never do to say that the hospital could not handle the case. So this patient was sent down to the hospital; it was a couple of days after the extraction had been done. But the thing was just as easy as saying your a-b-c's, because the patient had kept the wound plugged with absorbent cotton or iodoform gauze. Well, I took the buccal root out; then I took the lingual root out. There was a sinus leading up toward the nose, and I curetted it; it was as simple as a-b-c. Before that man went away he thought I was a "whale of a fellow" and that the dentist who had broken the tooth was not much good at all. But that dentist was probably just as good as the average fellow; the only thing was that he had not had much experience in that kind of work and was a little afraid of it.

Now, as Dr. Cross says, we want to get a better idea of the surgery of removing teeth. I want to say for your benefit that for seven years now I have been engaged exclusively in hospital work, outside of my teaching at the university. I have seen hundreds and hundreds of operations, and I can say that the operation for the removal of an appendix is mere child's play sometimes compared with the removal of a single tooth. They are not in the same category at all; the physical disabilities that you labor under in the one case are not present in the other. The physicians and surgeons do not recognize that until they have been associated with dentists for some time and have observed these things for themselves. It is physically impossible to remove some teeth without breaking them, and the sooner the physicians and surgeons learn that, the better.

Speaking about surgeons doing oral surgery, I may say that I have seen a few doing it. It was brutal in the extreme to see such men perform surgical operations for the removal of a supernumerary tooth or an unerupted tooth that was in the arch. No man here could do it better; and that is the reason why a man should be trained both in surgery and in dentistry if he intends to practice oral surgery.

Just one other thing, in regard to your pyorrhea. I know that the specialists are here, and I know what I am talking about when I say that it is a misfortune to send your patients away for pyorrhea treatment. You lower yourself in the estimation of your patients when you cannot treat pyorrhea and you send them to somebody else. They know as well as you know that you and the specialist graduated from the same school, and when they go to the specialist and see that it is simply a question of using scalers and cleaning the teeth—because that is all it is—they come to the conclusion that there is something wrong with you and that the other man is a better man and worthy of a better fee. It is not difficult to get the instruments necessary for the treatment of pyorrhea. Put the time on it, and do it yourself. No work that you can do will yield to treatment so quickly and so beautifully as pyorrhea work. We are having it done every day by the students at the university. Every student in the school has a set of pyorrhea instruments and is using them, and we are getting just as good results there as are being obtained anywhere, so far as I can see. I think it is a tremendous mistake for dentists to send their pyorrhea cases to others, because preventive dentistry, not curative dentistry, is the thing we are aiming at now. The best thing you can do along the line of preventive dentistry is to treat this pyorrhea yourself and to treat this interstitial gingivitis that you see from time to time.

Now, may I say again that I am very grateful to be here? It has been my privilege to be out of general practice for some time. I do not have to think of bread and butter; that is, I do not have to send out any bills. I get a small cheque every month, and having regard to the modest manner in which we live in Montreal, that cheque is sufficient to meet the needs of our kitchenette. I appreciate the privileges connected with my university work. I have been permitted to take two or three special courses, one in bacteriology, one in pathology. I have attended lectures in surgery for three years. This is something that may surprise you: We have a condition in Montreal at the present time, brought about within the last year, that does not obtain in any other place on this continent. Without any solicitation or any suggestion on my part, the Medical Board of McGill University have put dentistry on an equal footing with all the other specialties in medicine. Dentistry, therefore, in our hospital has exactly the same standing as all other specialties in medicine, and I have a seat on the Medical Board, with the same rights and privileges as all the other members. And that is where dentistry belongs; no hospital to-day is complete without it. My life work, whether it shall be long or short, will be simply to try to do all I can for the elevation of a profession which, in my estimation, is the equal of any profession in the world and calculated, I believe, more than any other profession, to bring health, happiness and physical wellbeing to the people. McGill University has made my life very happy along that line. I have said that I do not have to think of bread and butter. I would not like to suggest that they pay me too much, but I get enough to live on, anyway, and I do not have to think of the future. When I first went to Montreal I was very lonesome; I could have cried to get back to Ontario, but I want to say very frankly that I would not change my position or my work with that of any other man practicing dentistry on this continent. Gentlemen, I thank you. (Applause.)

PYORRHEA AND ITS TREATMENT

Thomas B. Hartzell, M.D., D.D.S., Minneapolis, Minn.

A lecture delivered before the Indiana State Dental Association, May, 1920.

The matter upon which I am asked to speak is that of protecting our patients in the treatment of pyorrhœa. I have had an ambition all my life to make dentistry somewhat better than I found it. I think the activating force that led me into that view was the continued failure noted during my college course and for some years after graduation, in the care of mouth infections; and the facts that I had the privilege of graduating in medicine in connection with my dental work. and have taught in the school of medicine in the University of Minnesota continuously since 1890, have kept me in touch in a rather broad way with human ills. I have had the privilege of serving with a group of men on the staff of the teaching hospital ever since we have had one, and instituted in the institution a course in mouth sanitation which has so convinced the members of my faculty in medicine of its value that they have established it on a firm basis, with a trained nurse, whose business it is to carry out the instructions of its supervisor, and train the other nurses in the principles of prophylaxis.

I was gratified at what I heard in the paper of your president, and I have but one suggestion to make on his recommendation to start a campaign for prophylaxis through the state for the laity, and that is, that he start that campaign by a very thorough and accurate training of the dental profession first of all. I have noticed that streams never rise higher than their sources, and that the average dentist does not pay enough attention to the condition of the human mouth to know when he sees infection.

I have been called into consultation many times by physicians to act on the work of previous dentists who had not recognized anything in the mouth to criticise. That condition among ourselves must be corrected before we can carry on a successful campaign among the laity, because we must know before we can teach others, and know much more than we attempt to teach.

It has been my ambition to simplify this question of pyorrhœa. I want to touch for a moment on its history. During the past week I have been reading a little book that was published in 1701 by a member of the faculty of the College of Medicine, of Montpelier, France, in which he states some principles in regard to the treatment of cancer which have been neglected by the profession of the present day. I have found in books published long ago evidence of the fact that the men of a couple of hundred years ago understood the problem of pyorrhœa, and presently, perhaps, I shall find that the very things we are trying to teach now were taught many years ago.

I want to read a portion of a translation from the works of Pierre Fochard, published in 1746: "There is yet another species of scurvy, of which I think no other author has as yet had occasion to speak, and which, without affecting other parts of the body, attacks the gums, the alveoli, and the teeth. Not only are the soft, livid and swollen gums plainly affected, but those that are free from those vices are not exempt. It is to be recognized by a white, sticky pus, which can be made to come out by pressing the finger firmly from above downward, on the upper jaw, and from below upward, on the lower jaw. This pus comes out between the gums and the body of the alveoli, and sometimes between the alveoli and the roots of the teeth, which happens more frequently on the external surface of the jaw than the internal. We can refer, as the cause of this disease, to a rupture and disunion of the capillaries, produced by degeneration of the fluids that circulate through them. (That is Talbot's theory). These fluids have extravasated into the intermediary spaces, or in the neighborhood of some of the vessels, which they have affected; and they break down, forming ulcers or fistulas. From this source is derived the prurient matter which is seen to issue from between the teeth and the borders of the gums. The effect is that those who have treated this disease with external remedies never succeed in curing it, which might give rise to the opinion that the disease comes from an internal or systemic cause. To assure myself of the incorrectness of this conclusion I have noticed that wherever the teeth have been lost from this disease, the alveoli and the gums become so well re-formed that no pus comes from them. I should conclude that this disease cannot be radically cured until the defective teeth are out of the mouth. (With that I disagree). Keep the mouth clean, lance the gums when necessary, rub vigorously each day with a finger dipped in an astringent. It is necessary to cleanse the mouth well after each meal with a little water and wine mixed together. (You can't do that now!) Be careful and bear down firmly with the finger on the gums in rubbing them to expel the pus."

That is a good picture of pyorrhœa, isn't it? and it was written in 1746! A little rough as to his etiology, but when you think of the period in which it was written, you find it to be a classical picture.

It was once my fortune to sit beside Dr. L. D. Shepard, who was a personal friend and a member of the same society with the late Dr. Riggs, and he gave me the "transactions of the Connecticut Valley Dental Society" as a present. In these "transactions" I found a resolution which gave Dr. Riggs great credit for a new and successful method of treating pyorrhœa, and the occasion of the receipt of that gift by me was that I was making an address upon this same subject in the city of Boston, where Dr. Riggs lived a part of his lifetime. The donor of the book was a close personal friend of Dr. Riggs who saw him operate.

I mention these things that you may know that I am not taking a narrow view of the subject we are about to discuss, and that I appreciate that the disease itself is as old as mankind: also that much good has been done in the treatment of pyorrhœa by the men who have gone before. I do believe, however, that we have succeeded less well with it than with almost any other disease commonly known.

My endeavor has been to try to determine the cause of this failure, and I think it is chiefly because we have not understood its etiology. If we have understood its etiology, we have not acted upon our knowledge.

I am going to make a few dogmatic statements. I believe them, and believe I have documentary evidence and laboratory experience to prove every statement I make. I am going to make the broad statement that pyorrhœa *could not exist* except for the bacterial growth on the teeth. It would be impossible to have either a pyorrhœa or a gingivitis of continued presence without bacterial growth on and around the teeth. *Bacterial invasion* of the tissues is the great factor. There are three or four other factors in the condition we are discussing as pyorrhœa. Briefly, they are malocclusions, which create congestions which make easy the invasion of the softer tissues by the bacteria growing on the teeth. The matter of diet is a very great factor. I do not know whether to rank diet or malocclusion second. I rank bacterial invasion first. Malocclusion and diet are about equal in their power to reduce the vitality of the tissues and permit bacterial invasion.

Those of you who know anything about the northern countries of Scandinavia know that among the poor who have meager plots of land, and who grow a comparatively small amount of crops, and who take their goats to the mountains in the summer, they do not lay up a store of vegetables sufficient to carry them through the winter. The children come through the winter into the spring with gums inflamed and swollen, and hanging away from their teeth; and they do not improve that condition until the oranges come in from Spain, and they get the acid that is necessary to remove the bad effects of their faulty winter diet.

You who follow the work of Howe, who has told us he could feed guinea pigs on a scorbutic diet and produce inflammations of tremendous import, will readily understand this condition. You who listened to Major Wells, of Toronto, who came to our city recently with a paper on "Scurvy and Rickets," in which he showed us the pulps of many teeth of guinea pigs and monkeys which had been killed by placing the animals on a scorbutic diet for two or three weeks, and tremendous bacterial invasions produced, and who exhibited pictures of animals and of cuttings of jaws which showed rapid correction of inflammations in these localities by anti-scorbutic diets, will understand this condition. Or if you have followed the work of Mennell, of Harvard, and of McCullom, of Baltimore, who have been experimenting with diet on animals with rickets, you will admit that the proof is well adduced; that we can create conditions by faulty diet, that lead to swift bacterial invasion, and aid in the production of pyorrhœa.

It is equally certain that when you break the dental arch and produce a malocclusion, in which the forces of occlusion amounting to about seventeen hundred pounds a day, as Dr. Black told us, and in many mouths amounting to a ton or two, congestions are induced that make bacterial invasions easy.

Accept my word for the fact that bacterial invasion is *positively essential* to pyorrhœa. Does the dental profession realize that? Do we teach that to our patients before we begin to treat for pyorrhœa? We should teach the patient that pyorrhœa depends on bacterial filth in the mouth. If we do not, are we fair to him? In order to succeed in the treatment of pyorrhœa, we must carry to the patient a comprehensive knowledge of his condition; make him realize it. We must tell him what causes that condition, and enlist his assistance in fighting it. The simplest way to do that is to change the terms "bacterial invasion" and "bacterial masses" to "mold." Every housewife knows what mold is; every farmer knows that moldy corn will not sprout and grow and will cause disease in animals to which it is fed; the millers in the mills who have to keep their millstones and rolls clean, know that mold is objectionable. Nearly everyone knows that mold is a form of parasitic growth that is inimical to the best interests of anything upon which it appears.

I am going to give you a little chapter of experience which I hope will help you. *It is useless to treat pyorrhoea as we have been treating it.* I have made a lot of mistakes. I recall the time when I thought it necessary to treat pyorrhœa with instruments only, and I thought it necessary to have a certain kind of instrument, and that if we did not have that kind of instrument, we were damned.

There is nothing in that.

If I were given the choice of treatment by a man who understands how to teach me the bacterial origin of pyorrhœa, and how to prevent that bacterial growth from day to day, or the treatment of a man who does pyorrhœa treatment with one hundred and fifty planes or scrapers, without having a comprehensive idea of why I have pyorrhœa, I would go to the man who *does not use a steel instrument at all;* because, in the University Teaching Hospital, where I have had eighty beds under my care for five or six years, we take the average case of pyorrhœa or gingivitis and without the use of instruments except in the very limited way mentioned later, we expect all the bleeding and almost all of the pus-flow to *stop in ten days!* Why? Because we teach those patients how to take the bacterial mass off the teeth and *keep it off,* and then the pus-flow ceases, and the gingivitis gets well of itself.

I draw your attention to the fact that when you have a hernia, you build it up by overlapping the fascia and stitching them together to hold the hernia in. If you treat that hernia with ordinary catgut, the catgut is absorbed and the hernia bursts through again. So we have to use a different catgut, sometimes "twenty-day gut," and sometimes, with a big hernia, "thirty-day gut," because these each have been prepared so that it takes twenty days of effort by the absorbing cellular organisms to break them down, or thirty days, as the case may be.

As soon as you have established the habit of absolutely cleansing all of the teeth from the masses of bacteria that grow on them, which I tell my patients is mold, so that there is no more ingress of mold under the gum, immediately the circulatory organisms in the ulcer begin to absorb the deposit, and at the end of six or eight months most of those bunches of calculus are gone, just as the catgut is eventually taken up in the abdominal wound.

I do not advocate waiting and leaving those masses of calculus on the roots, for Nature to handle, because it is a short cut to take them off and stop all pus-flow in a week or two—within a day or two, oftentimes. The deposit on the root is the result of inflammatory action. It is poured out into the wound, and the acid excrement of the bacterial growth precipitates it, and it is glued onto the surface of the root by the mucin, which acts as a holding agent; and the minute you cut off the bacterial invasion, and the inflammation stops, Nature begins to do what she always does, correct the irritating agency by absorbing it.

There has been great progress made in our knowledge of mouth growth that is inimical to the body. I am going to make a brief statement of the damaging bacteria I know to exist in the mouth. Roughly speaking, half the growth on every tooth-neck is streptococcus viridans; one-fifth of the growth is staphylococcus. The balance, thirty per cent., is made up, in the order of their damaging possibilities, of pneumococci, fusiform bacilli and accidental thread forms. I mean that the latter type of bacterium is not a constant inhabitant of the buccal cavity, and it not always present.

The human mouth is born sterile. Blavatsky, of the Pasteur Institute, published a splendid paper on that subject in 1915. The human mouth is sterile at birth. It takes up streptococci as soon as the baby's mouth goes to the mother's breast, because on the skin of the nipple there is an abundance of streptococci. Streptococcus is almost universal; it is in the dust of the streets, in the dust of our homes, everywhere, always. These little cheeses that are wrapped in blue ribbon and tinfoil and which look so good to eat, are about half streptococci. And milk! I once served on the Hennepin County Milk Committee. Farmers used to bring in milk that would run a million bacteria to a centimeter! The idea of feeding babies milk like that! It was mostly streptococcus viridans, the greatest acid maker of them all.

Here is a little legend about the importance of bacteria: Why don't you know about it? Why isn't it a living entity to you? It is because you don't appreciate it. The subject of bacteriology is the most important subject of which I know anything. Human life on this earth would, of course, be impossible if it were not for bacteria. None of us would be here if it were not for bacteria. Why? Because every bit of cellular construction, the oak tree, the flower, the plant, the human body, the animal body, without the action of bacteria *never would decay*. True, the human body might dry up, like those found in the pyramids, but it never would disappear. The plant, the flower that blooms to-day, would dry up, but it would lie where it fell until Gabriel blew his trumpet; and the oak tree would stay until the end of time; and that blanket of undecayed vegetation would kill out everything necessary to support life, and we shouldn't be able to live here.

Why do those things go back to the soil? Because the Lord in His wonderful knowledge of what was needed to support life in its endless cycle created the little insignificant bacterium, which takes each cellular element back into the soil—tears it down and sends it back, to be used over and over again. I don't know but what parts of my body may have been used fifty thousand years ago to build the body of a red Indian or an animal. These bacteria make it possible for us to go on and live and propagate. The principal work of a bacterium is destruction, and if it becomes a parasite, it destroys whatever it is on.

It is said that, "A clean tooth never decays." What do we mean by a clean tooth? One that is white and shining? No. What we mean is a tooth on which bacteria are not growing. There are just two things to remember about the destructive power of bacteria as far as the teeth are concerned. The destruction of a tooth surface, coated with enamel, depends on the excrement of the bacteria, which is acid. If it were not for that acid excrement, the tooth itself never would break down. The destruction of its environment and the formation of pus in the soft tissues depend on digestive ferments. Such ferments have the power to turn the fixed cell into a fluid on which it may live; and so it tears down, and, unfortunately, it does something the soil bacterium doesn't do. It has two methods of attack. The excrement of the soil bacterium is a good thing and helps the soil, feeds it. Its destructive or its disintegrating power is its valuable characteristic. But the excrement of the mouth bacterium is bad, because it dissolves the enamel coat, and opens up the way for congestion and the subsequent loss of the matrix.

In talking with my patients as they come in, I say, "What I mean by a clean tooth is a tooth free from mold." If you talk about bacterial masses, they smile, but do not understand, and of course do not act upon your word. I remember one old professor who taught me—he was a Dane. He used to say, "Use your eyes, and your nose, and your taste; use every faculty you have in diagnosis." Once, when doing a gall-bladder operation, to illustrate his point, he touched a finger to the bile, and then touched his tongue, and we all did the same! Then he said, "You fools; didn't you notice that I put a different finger into my mouth than the one with which I touched the bile?" That lesson never left me. When I have a patient who has a dirty mouth, I tell him first that his mouth is unclean. The fastidious ones at times are offended. Then I take a scraper and scrape the tooth and put the scraping on the index finger of the patient, and tell him to roll it around between finger and thumb until that bacterial mass is well kneaded and smeared, and then tell him to smell it. That is a good way of impressing the patient with the fact that there is something on the teeth that is objectionable. Then I take a disclosing solution and flow it on about a quarter of the teeth, give the patient a mirror, and say to him, "When I shoot a stream of water over those teeth, wherever they are free from mold the stain will wash off instantly." And in every pyorrhetic mouth, unless the patient scraped his teeth just before he came to the office, we will find great masses of mold and bacterial life.

The next step is to teach him how to take off the mold, and if the patient understands the relation of the mold to pyorrhœa, it is easy.

Ordinary instrumentation and depending on the patient coming to you once a week or once a month for several years maybe, is begging the question, and you eventually lose out. Whereas, if you teach the patient the etiology and visualize it to him, and in commenting on the situation say, "If you had a servant so careless as to serve food in that condition, you would at once discharge that servant,'' and, ''How can you bear to put those teeth through your food when they stink, and rub that stinking stuff into the food that goes into your stomach?'' you will get real results. I appeal to my patients by every possible means to create distaste for the condition present in their mouths.

After doing that I take a tooth brush, and teach them how to take off the bacterial masses and keep them off; and I get a promise from them that they will spend fifteen minutes of every day in maintaining a condition of bacterial and mold freedom. If they refuse to co-operate, I extract the teeth. I am not in sympathy with those who are practicing pyorrhœa treatment and having their patients come back once a week or once a month for long periods. I teach my patients that if they do as I direct, they need come back only once or twice a year to have the calculus removed that is deposited in such positions that they can not reach it; and I teach them that when they are once cured, they are cured "for keeps." I am endeavoring so to simplify the treatment of pyorrhœa that it will be treated successfully and completely eradicated.

Unless you grasp the common fundamental facts about bacteriology, and use them for the benefit of your patients, you are far from fulfilling your function as dentists. I have been called to speak to as many medical as dental associations in the last few years; and the medical men of New York, in their one hundred and eleventh session, when I took part in the symposium in discussing the glandular infections of the body, giving my views from the mouth standpoint, told me that they welcomed me because they realized that dentistry was a specialty in medicine, and they gave me the right-hand of fellowship. And they are trying to give you the right-hand of fellowship. The trouble with the dental profession is that we have been called to the wedding, but we haven't put on the wedding garment. The way for dentistry to get this garment on is to accept the fact that the bacteriology of the mouth is a potent thing, lying at the gateway of success as a specialty. We want to make potent use of this type of work in the mouth, and the moment we become able to teach our patients the reasons for things, we will have the most delightful period of practice we ever have experienced. Nothing can give greater satisfaction then to treat a case of pyorrhœa or mouth infection, in which the teeth are loose and wobbly, and actually see them tighten and stay tight and quickly return to normal.

A few weeks ago I held a clinic in my office during what is known as "Medical Week." There were four thousand physicians from the Northwest, from Montana, the Dakotas, Wisconsin and Iowa invited. All the men in the medical profession who have anything to offer are asked to give a clinic during "Medical Week." As I belong to the Medical Society I volunteered this clinic: I sent out into the country and asked a farmer who had been a patient of mine a year before. He had been sick for two years and was running a temperature. His physician did not want to operate, and sent him to me. I found his teeth coated with mold from the cutting edges to the gums. The teeth were very loose, and I recommended extraction. This man was a Hungarian. He never had seen a tooth brush, much less owned one. I said: "John, your mouth is full of mold. Do you know what mold is?" "Yes." "Your teeth are moldy. Those teeth are so loose they should be extracted." He said, "I don't want them extracted." When I got ready to extract, he backed away, and begged so hard to keep his teeth that finally I said, "If you will do exactly as I tell you, there is a chance that you may keep those teeth."

The central incisors below had less than an eighth-inch of attachment in the socket; they wobbled badly, and I thought I was foolish to leave them in; but he pled so hard that I consented to do so. I showed him the moldy coat. I removed the calculus and taught him how to use a tooth brush. I got a promise from him that he would brush the teeth twenty minutes a day. It now has been a year since those teeth were treated, but they are as rigid as you could expect teeth to be that had less than a quarter of an inch of good bony socket, and they have been in hard and constant use. He has gained thirty pounds in weight, has gone back to his farm and is working like any other man. He came up from the country, spent a night each coming and going, and a day in my office, and showed his mouth to fifty physicians who visited me during the two days of my clinic.

His brother had the same type of case. In the molars in each case the bone was so badly absorbed I could push an instrument through between the molar roots, and yet those teeth, last week under the disclosing stain, showed nothing abnormal. They are solid and rigid, and the men are chewing on them. These men told their story over and over again to every one of those physicians who was interested.

The method of my clinic was to splash disclosing stain on the teeth of one of those doctors and say, "This is streptococcus, staphylococcus, pneumococcus," and so on. And then I had them put their fingers on the teeth of those two men and test them. After putting disclosing stain on the teeth of the physicians, I took a tooth brush and cleansed their teeth myself. I believe it was an effective lesson.

I could bring you a hundred cases that have been cured of pyorrhœa, and cured for from one to five years. The secret is in demonstrating to the patient that his teeth are moldy, teaching him how to keep those mold masses off, and helping him to form the habit of keeping them bacteria-free. Whenever patients come back to check up, if there is a spot they have missed I call their attention to it and clean it myself. Frequently the anterior half of the mouth is clean, but the molar teeth are unclean; or perhaps the whole mouth is clean except the back of the third molar. I teach them how to clean those places, give them a prescription for disclosing stain, which I advise them to use twice a week after they have cleansed their teeth, to see whether they have taken the bacterial mass off. The whole secret is to get rid of the bacterial growth and keep the teeth free from it.

I want to discuss a little further this question of the cause of pyorrhœa. Malocclusions certainly ought always to be corrected. You demonstrate malocclusions by the use of carbon paper, by taking casts, by mounting the models on articulators, and studying the occlusion; and then you must correct it. Every line in a human tooth means something; remember, that every curve and contour has a purpose. The "tin-can crown" never was meant as a preventive of gingivitis! One of the most encouraging signs of the times is that our dental teachers are dwelling vigorously on restoring toothform in such a way that all of the protective lines of the human teeth are re-created in the crowns, instead of making them a mere slip-on cap.

All types of mechanical irritation around teeth must be eliminated if the bacteria are not to break through the doors made by the congestion caused by such irritants.

There is a group of men who grind and polish teeth a great deal. They grind them so much that at times they ruin them. There is one simple rule for mechanical interference in treating pyorrhea that stands, and it is this: Cleanse the teeth carefully with a tooth brush; apply disclosing stain, and wherever disclosing stain is retained on the teeth it will be because the acid created in the course of bacterial growth has etched little shallow furrows or serrations in the tooth surfaces that hold and retain the bacteria that the brush can not reach. Then take a stone, sharpened to a point by holding a fissure-shaped carborundum stone on it, and go after those little areas that still contain the stain, and level them out.

ord didn't intend that we should grind those teeth much, and you are only grinding them to make it possible to sweep the bacterial growth off with the brush.

Why is it that these bacteria accumulate so rapidly and so constantly? The streptococcus in glass is seen to double about every twenty-two minutes; in the mouth every thirty-five minutes. Its excrement accumulates to a point where it acts as a deterrent to further growth. If it were not for that the bacteria would completely fill the mouth in a short time; but they cannot go on multiplying. They limit themselves.

I will give you the prescription for a disclosing stain. I will ask you to use it systematically for one month. Then if you have the heart to give it up, you deserve to go where I know you will go! The following is a prescription for one ounce of the solution: fifty grains of iodin; fifteen grains of zinc iodid, fifteen grains of potassium iodid, four drachms of glycerin. Put these in a mortar and triturate them until they are smooth. Then pour out that mixture and take four drachms of water and wash out the mortar. I have dictated this carefully, because I have seen that prescription published many times, and seldom correctly. If you mix all the ingredients together and pour the solution all out at one time it won't stain the bacteria. The reason is that the glycerin sticks to the mortar, and holds a lot of the salts. You don't get it all, and of course it is not right. The *compounding* of that prescription has everything to do with its value. The solution is exactly right. It will not burn the tissues, it will reveal the bacterial mass, and it is healing for turgid and swollen gums. Use the four drachms of water to *wash out the mortar*, and get it all out, and you will have a solution you will enjoy using. Give this prescription to the patient, first demonstrating to him the bacterial masses on the teeth by using it. Observe that when you flush it off the teeth and find stained masses over little oval white decalcified areas that you will soon learn to know, without using the explorer, where to find cavities.

If the sainted Dr. Black had only made the idea stick, which he did not although he tried hard enough, he would have adopted a different slogan than "Extension for Prevention."

He never would have needed to teach extension of the cavity cutting for prevention if he could have gotten this idea to stick, because it is not necessary; but it was too early. I don't know whether you are ready for it even now; but if this idea sticks you will give up extending cavities for prevention; you will clean the teeth for prevention, because the only thing in the mouth that makes cavities is bacterial mold. Your worst pyorrhea pockets are between the teeth, because the bacterial masses there are heaviest because undisturbed and hardest to remove.

In using the tooth brush start working the bristles in between the teeth. We want a brush with wide spaces between the bristle-tufts and rows, and with stiff bristles, so they can be inserted between the teeth. The bristles must be worked in between the teeth to displace the bacterial masses that reside there.

In cleansing the upper teeth, place the tooth-brush points away from the gum, and let a tuft of bristles extend beyond the last tooth. With a gentle jiggle move the tooth brush a little back and forth, about the sixteenth of an inch, until the bristles slip up the contoured convex crown, and fall in between the teeth. Then drive them in with force by a little short movement, and press the sides of the bristles against the gum, and let the tooth brush work back and forth. It is a great mistake to move it too much, as the bristles do not remain in place but leap in and out. That injures the gums, and does not cleanse. The bristles are to be deflected away from the gums. They must slip by with gentle pressure until the bristles have entered the spaces between the teeth; and then, when entered, deflect away from the gum; squeeze them in far enough so that the spaces are filled with bristles, so that the sides of the bristles cleanse as well as press the gum. If you had a swollen finger, you would not massage it toward the finger tip, but away from the tip. You would drive the fluid out of the finger back toward the heart. If we gently slip the bristles in between the teeth and with gentle pressure squeeze the gums a little, we empty out the congested blood, and carry the bacteria which are massed in the gums out into the circulation where the phagocytes can attack and destroy them.

I have had three classes in the Southwest recently, and started thirty men each time with a case. We started by putting a patient in the chair, and after giving him an idea of the cause of pyorrhea, I asked each one of the class to demonstrate to the patient what I have been telling you. I had asked members of the class to bring their pyorrhea instruments with them, the ones they could best work with. I said to them: "Carry the first patient through the entire week with nothing but mouth and tooth cleansing as described, and the other ones you may operate upon as usual with your instruments." We endeavored to make diagnosis and prescribe what should be done for every case. At the end of the week those men without exception said: "Where can we buy tooth brushes?" They had less use for their instruments.

I don't believe there was a single doubter among the hundred men. They were so won by the logic of the situation shown by that single case for a week that they all wanted these tooth brushes. My brushes are not perfectly ideal, but they are the best I can buy.

Patients will come back exhibiting areas that they cannot cleanse with the brushes they have. Then get brushes that they can cleanse them with. For the inside of the arch it is better to have a small brush. Most makers make them too big and clumsy, and the bristles so packed together that you cannot insert them between the teeth. The patient must be willing to give as much time to the work as is necessary, at least fifteen minutes a day. If the patient has a space between molars that he cannot reach with a particular brush, supply him with a smaller brush that he can get into that space. It has been a joy to see the results of this treatment.

Where are the brushes to be had? you will ask. The Canadian Oral Prophylaxis Association has been making good brushes. Up to the time the war broke out you could buy the proper brush for thirty-five dollars a gross. I have bought many gross. I tell you that to show you I am practicing what I teach. Now, who originated this brush idea? Dr. Henry Barnes, of Cleveland, Ohio, first wrote a paper on interdental brushing. His scheme was to prepare little brushes, and insert them between the teeth, and he advised keeping the brushes soaked in water. The men who followed Dr. Barnes and grasped that thought and amplified it, are Drs. Charters, of Des Moines, and Morton, of Milwaukee. I have been doing this more or less successfully for some years, and am prepared to say that is the greatest single advance in the production and maintenance of clean mouths that has been made in the last fifty years.

I said that diet affected the condition of immunity from or ease of bacterial invasion, and it surely does. One of my friends in Minneapolis said a few days ago that he had no use whatever for a tooth brush. He said he controlled such conditions by diet. Analyze that thought. Can you influence any great number of people as to diet, and get them to maintain it for any length of time? Diet is a matter of habit cultivated from the cradle up; and while you may advise people not to eat too much sugar, and salt, and fats, and heavy meats, and to eat more grain, fruits and vegetables, you have no assurance that they will do it. You will not have much success in trying to influence people toward diets that are markedly different from that they are following. You can create a new habit much easier than you can break up an old one. Eating certain kinds of food is a habit of the palate, and it is discouraging to try to change a diet in a patient; but I can create a new habit without much trouble.

An advertising dentist attended one of my clinics. I did not know who he was. Three or four days afterward he came back. He said: "Dr. Hartzell, can I get some more of those tooth brushes?" "Yes, you can buy them, or if you want some of mine, I will let you have them." He got three or four dozen. He said: "It is the first time I have had the feeling of a clean mouth, and I want some of these for my own use until I can get some from the manufacturers, and I want to use some of them on my patients."

The grinding of teeth to secure good occlusion is to me the hardest thing in the treatment of pyorrhœa. I can stimulate the interest of my patients and hold them to the following of my instructions very well; but I cannot always tell when to grind and when not to grind teeth to correct occlusion. In a nutshell, however, my treatment is this: *Maintain a clean mouth. Learn to remove bacterial growth. Teach the patient the importance of it. Explain the method with tooth brush in place in the mouth; place and hold it there yourself; use the tooth brush in the patient's mouth yourself. Keep at it until you know that the patient can use it properly.*

In the past year I have had some blood pressures of two hundred and thirty and two hundred and forty fall to normal on removing the bacterial mouth-factor. Of course, there are many other things that create hypertensions besides mouth infections; but when mouth infections are found, and you correct them, you are doing your patient a very great service.

When you insert an instrument under the gum to remove deposits of calculus, be very gentle about it, and don't cut too deep. You had better cut too thin than to open up the cementoblast in the cementum to infection.

Dental Societies

REPORT OF EXECUTIVE COMMITTEE OF CANADIAN DENTAL ASSOCIATION RE 2 PER CENT. TAX

The ruling of the Inland Revenue Department of the Dominion Government classifying dentists as manufacturers for the purposes of the 2 per cent. tax was first brought to the attention of the Canadian Dental Association through letters of protest to the Board of the R.C.D.S. from Dr. D. M. Foster of Guelph in September, 1920.

Some idea of the ruling is given in the following letter:

Ottawa, August 20th, 1920.

B. Iler, Esq., Collector Inland Revenue,
Guelph, Ont.

Dear Sir,—

In regard to your letter of the 12th inst. re dentists, you are informed that dentists are regarded, for the purposes of the sales tax, as manufacturers in respect of any material which is manufactured by them, such as bridge work, inlays, plates, etc., and that since such work is usually performed for the consumer or user, the sales tax thereon is payable at the rate of 2 per cent. The charges made by the dentists for affixing such bridges, plates, and inlays in place are not subject to the payment of sales tax.

(Signed) George W. Taylor,
Asst. Deputy Minister Inland Revenue.

As requested by the Board of the R.C.D.S., the Executive Committee of the Canadian Dental Association considered the question and decided to make an organized protest against this most objectionable reflection on our status as a profession and endeavor to have the ruling changed.

A number of committee meetings were held and the following course of action decided on. First a strong representative deputation to go to Ottawa and interview the Minister of Finance and in this connection Dr. R. G. McLaughlin was asked to prepare, in conjunction with legal advice, a brief on the question so that the views of the dental profession might be properly presented before the Minister.

Telegrams were sent to every Provincial Society or Board asking their co-operation and that of local societies to the extent of appointing a representative on the deputation, or, failing this, to forward letters giving reasons for their protest against this tax.

Considerable correspondence ensued and finally the following deputation was authorized and appointed:

Canadian Dental Association—Dr. A. E. Webster, Toronto; Dr. S. W. Bradley, Ottawa.

Ontario Dental Society—Dr. Wallace Seccombe, Toronto; Dr. F. J. Conboy, Toronto.

President of Board of R.C.D.S.—Dr. W. M. McGuire, Simcoe.

Professor of Jurisprudence, R.C.D.S.—Dr. R. G. McLaughlin, Toronto.

Nova Scotia Dental Society—Dr. F. W. Ryan, Halifax.

Quebec Dental Society—On representative.

Toronto Dental Society—Dr. W. H. Coon, President; Dr. Harold Clark.

Hamilton Dental Society—Lt.-Col. W. G. Thompson.

Military Dental Association of Military District No. 2—Lieut.-Col. C. E. Corrigan, D.S.O.

Strong letters and resolutions of protest were also received from Calgary Dental Society, Lethbridge Dental Society, Edmonton Dental Society, Vancouver Dental Society, Regina Dental Society, London Dental Society, Alberta Dental Association, Medicine Hat Dental Association, British Columbia Dental Association, College of Dental Surgeons of British Columbia, Military Dental Association of Military District No. 2, Dentists of Belleville, Ontario, Prince Edward Island Dental Association, La Societe d' Odontologie de Montreal, Montreal Dental Club, Manitoba Dental Association.

The President of the Canadian Dental Association, Dr. H. F. Whittiker, took advantage of the visit of the Premier to Edmonton to lay our views before him and received a reply that the matter would be discussed with the Minister of Finance on the Premier's return to Ottawa. The Secretary of the Canadian Dental Association, was instructed to write to Ottawa asking for an appointment for the deputation with Sir Henry Drayton. Several letters were written but only evasive replies were received to the effect that the matter was under consideration.

About the middle of October a still more objectionable order was sent out in connection with the change in the method of collecting the 2 per cent. tax. Some dentists were informed they would have to take out a trading license, fee $5.00, and secure a stamp cancelling machine for use in collecting the tax. A copy of one of these letters is attached:

INLAND REVENUE, CANADA: DIVISION NO. 23.

Belleville, Oct. 14, 1920.

Dr. C. M. Reeves,
Tweed, Ont.

Dear Sir,—

As you sell articles subject to the sales tax and as yet have not taken out a license I will ask that you send in your application at once. Blank forms for this purpose you will please find enclosed.

Yours truly,
(Signed) A. A. McFEE, Collector.

Letters, each more insistent in tone, continued to be sent to Ottawa, demanding an appointment for the deputation, but finally the Government, realizing perhaps the widespread dissatisfaction caused by their stand, rescinded the ruling and the following letter was received:

DEPARTMENT OF FINANCE, OTTAWA, CANADA.

26th November, 1920.

Edmund A. Grant, Esq., D.D.S.,
Sec.-Treas. Canadian Dental Association,
Toronto, Ont.

Dear Sir:

With further reference to your letters respecting the application of sales tax to work performed by dentists, I may state that on the 23rd instant an Order-in-Council was passed under which crowns, bridge-work, and plates to which artificial teeth have been permanently affixed by dentists, were exempted from tax on sales.

Yours faithfully,
(Signed) R. W. BREADNER,
R.W.B./E.K. Commissioner of Taxation.

And so, while it was unnecessary to send this deputation to Ottawa, the Committee feel that their efforts in organizing a united protest from the whole dental profession of Canada were not entirely in vain, and that the knowledge that this avalanche of protest was ready to descend upon them had no little effect upon the Government in causing them to rescind their ruling.

The Committee extend their thanks to the different provincial and local societies and boards for their prompt and energetic assistance towards a successful issue. With such united action the dental profession may always expect the justice of its claims to be recognized.

Edmund A. Grant, Secretary-Treasurer,
Canadian Dental Association.

WESTERN MANITOBA DENTAL SOCIETY

Brandon, Man., Nov. 27th, 1920.

At a meeting, which took the form of a banquet, held Friday night, the 12th inst. in the private dining room of the Prince Edward Hotel by the Dentists of Western Manitoba, a society to be known as the Western Manitoba Dental Society was formed.

The following officers were elected: Hon. president, Dr. M. H. Garvin, Winnipeg; president, Dr. R. S. Rose, Brandon; vice-president, Dr. H. A. Croll, Souris; secretary-treasurer, Dr. A. R. Hurst, Brandon; executive, Dr. E. H. Clark, Minnedosa, and W. L. Sawyer, Carberry.

Mouth infections as related to general health conditions was the subject of a splendid address delivered by M. H. Garvin. The address was made more interesting by the use of lantern slides.

It is the intention of the members of the Western Manitoba Dental Society to meet once a month, and an effort will be made to procure some prominent dentist to give a paper on one of the current dental topics of the present day.

THE NORTHERN ONTARIO DENTAL ASSOCIATION

At a gathering of dentists at the Sudbury Club, Sudbury, Oct. 7, in connection with the clinics held by Drs. Bartleman and Beattie of the Cleveland Dental Mfg. Co.'s educational staff at which dentists were present from Sudbury, Parry Sound, Sault Ste. Marie, Copper Cliff, Espanola, Sturgeon Falls and Mattawa, an organization was formed to be known as the Northern Ontario Dental Association.

The officers elected were: President, Dr. E. A. Hill, Sudbury; Vice-President, Dr. H. F. Goodfellow, Sault Ste. Marie; Secretary-treasurer, Dr. Geo. S. Martin; Members on Executive, Dr. B. F. Nott, North Bay, Dr. Shannon, Sault Ste. Marie.

A meeting for clinics, etc., will be held at Sudbury in February next, the date to be decided by the Executive.

Geo. S. Martin, Sec.-treas.

Editorial

EDITOR:
A. E. Webster, M.D., D.D.S., L.D.S., Toronto, Canada.
ASSOCIATE EDITORS:
ONTARIO—M. F. Cross, L.D.S., D.D.S., Ottawa. Carl E. Klotz, L.D.S., St. Catharines.
QUEBEC—Eudore Debeau, L.D.S., D.D.S., 396 St. Denis Street, Montreal; Stanley Burns, D.D.S., L.D.S., 750 St. Catherine Street, Montreal; A. W. Thornton, D.D.S., L.D.S., McGill University, Montreal.
ALBERTA—H. F. Whitaker, D.D.S., L.D.S., Edmonton.
NEW BRUNSWICK—Jas. M. Magee, L.D.S., D.D.S., St. John.
NOVA SCOTIA—Frank Woodbury, L.D.S., D.D.S., Halifax.
SASKATCHEWAN—W. D. Cowan, L.D.S., Regina.
PRINCE EDWARD ISLAND—J. S. Bagnall, D.D.S., L.D.S., Charlottetown.
MANITOBA—M. H. Garvin, D.D.S., L.D.S., Winnipeg.
BRITISH COLUMBIA—H. T. Minogue, D.D.S., L.D.S., Vancouver..

VOL. XXXII. TORONTO, DECEMBER 15, 1920. No. 12.

NATIONALISM OF A GREAT PROFESSION

When the fathers of Confederation created Canada, they gave us a constitution admirable in many respects and under which Canada has progressed marvelously. As time has passed, however, defects presented themselves. At confederation it was decided that the provinces should have exclusive jurisdiction in certain matters. Generally this has succeeded but in some respects it has not been wholly to the advantage of the people. For instance, the professions are solely under provincial control, dentistry being one of these professions. It has resulted then that a man might be licensed to practice dentistry in, say Ontario. As a practitioner there, he might have been a success, as a citizen he may have been of the very best type, an honor to his profession and a credit to his province, but the moment he stepped across the boundary into Manitoba, he became a criminal if he commenced the practice of his profession there without conforming to the laws of Manitoba, which meant an examination, probably months of study, and a delay with consequent financial loss. It was wrong, but how was it to be remedied? The provinces adhered strictly to their "rights" and every legislature in Canada would refuse to surrender any of their privileges nor would they permit their jurisdiction to be invaded. "Provincial Rights" was too strong a cry for politicians to oppose, hence the wrong continued even though the people suffered.

The dentists of Canada, however, saw the wrong. The dental profession has always, and does now, take the ground that the dental law shall exist only for the protection of the public. Upon this broad ground they acted and in 1904 set about remedying the wrong that the Fathers of Confederation had unwittingly established. In that year a movement was set on foot having for its object the nationalization of the provincial dental license. It was a big undertaking, for it meant the harmonizing of the various dental laws of Canada, the equalization of the standards of dental education in the various universities and dental colleges and the overcoming of a lot of prejudice which had grown up under fifty years of provincial control. "If a dentist is a good dentist in Ontario, why should he not be a good dentist in Saskatchewan?" This was the slogan upon which the work was started. "If a man is a good citizen in Ontario, why shouldn't he be a good citizen in British Columbia?" This question was asked and fitted in as a corner stone to the foundation of the dental nationalization movement. "Let us make the Canadian dental profession as big as Canada." This was the principle upon which the profession acted. "Why shouldn't the Canadian universities and dental colleges have the whole of Canada as a field of operations for their graduates?" Nobody has ever yet advanced a sound reason as to why they shouldn't. A few, it is admitted, said: "Oh, if you do that then all the privileges of provincial control have gone, and any reputable dentist from any part of Canada can come in and cut into my practice." And the answer promptly came: "And why not?" At that point the opponents of nationalization are blocked.

In 1905 the movement for nationalization got nicely under way. Every province in Canada was asked to elect one representative to form the Dominion Dental Council of Canada. Quebec, British Columbia and the Yukon held aloof. The other provinces joined hands and said: "We will do the best we can and trust to our own success to attract the others into the Canadian fold." "There shall be no coaxing and no coercion." If the other provinces want to come in all well and good, but we would not coax or attempt to coerce, for either one would be fatal to the permanency of the new nationalization movement, which because of its character had to be voluntary and depend entirely upon good will and just treatment.

For sixteen years the movement has now been under way. Three years ago B.C. threw in her lot. Last year the Yukon Legislative Assembly accepted by law the Certificate of Qualification granted by the D.D.C. of C. Now only Quebec remains out.

The certificate of qualification issued by the D.D.C. of C. denotes the highest standard of dental qualification in the world. This certificate is based upon from five to ten years' "Regular Ethical, Legal Practice," and an examination. The examination is admitted to be the fairest that is possible. Then having received this certificate the holder can at any time in his life proceed to practice in any part of Canada (except Quebec).

Thus at one stroke is demolished the old worn out argument used by back country politicians that a close corporation exists amongst provincial dentists, for the Provincial Dental Association can in no way prevent the hundreds of dentists who hold the D.D.C. certificate of qualification from coming to this or any other of the agreeing provinces.

The standard of dentistry has been perceptibly improved as a result of the coming into existence of the D.D.C. The nationalization movement has taken the best dentists to all corners of Canada instead of keeping them bunched up in the big eastern cities. The people have benefited accordingly. Let it be known that the certificate of qualification issued by the D.D.C. of C. is not obtainable by the quack.

For sixteen years this movement has been under way. Little has been said about it because the dental profession wanted to succeed before they spoke, but the recent council meeting held at Ottawa has determined the permanency and success, and now it can be said with certainty that by the voluntary efforts of the dentists themselves the defect in the B.N.A. Act has been overcome, the profession has been Canadianized, and that by methods which in no way interfere with provincial rights.

The visiting nurse of Barrie, Ontario, reported that of all ailments which affect school children and contribute to ill health and non-attendance, carious teeth is the most prominent.

DEATH UNDER ETHER ADMINISTRATION

A male patient of Kitchener applied to his dentist to have several teeth extracted. A general anaesthetic (ether) was advised and administered. The attending physician found, upon examination, much pyorrhœa, a goitre, but no valvular deficiency. As the patient entered the excitement stage, the heart stopped. Every known method of resuscitation was tried without avail. The physician's conclusion is that it is wiser to have patients who wish a general anaesthetic for tooth extraction to enter the hospital the night before for preparation.

Editorial Notes

Dr. Wickmore addressed teachers at Smith's Falls.

◆

Dr. C. H. R. Clark, Newmarket, died September 20, 1920.

◆

Saskatchewan Dental Society will meet in Moose Jaw, 1921.

◆

Dr. Irvine, of Lindsay, addressed the teachers' convention at Lindsay.

◆

Dr. Harry Stewart has been appointed dental officer for District No. 3.

◆

Dr. Boyd Gardiner addressed the Winnipeg Dental Society, October 12th.

◆

Dr. Arthur Smith gave a course in black anaesthesia at Edmonton, November 29, 1920.

◆

Dr. A. A. Hicks addressed the Teachers' Institute of East Kent on the care of children's teeth.

◆

The dental clinics of Halifax are teaching the children at an early age to care for their teeth.

◆

The children's teeth of New Toronto have been examined and will hereafter be regularly attended to.

The R.C.D.S. students and faculty have subscribed $650 towards the Christian Federation Campus Fund.

⁂

Dr. R. S. Arthurs, age 42, died in Brampton of tuberculosis. Dr. Arthurs had been practicing in Chicago.

⁂

Dr. Grace Armstrong read a paper on the care of children's teeth at the monthly meeting of the Regina Dental Society.

⁂

The Moose Jaw "News" was thanked by the dentists of the city for publishing a series of articles on dental matters.

⁂

Drs. Bartleman and Beatty, of the Cleveland Dental Company, are giving lectures on special dental surgery throughout Western Canada.

⁂

Dr. Gus Craig, a native of Kingston, Ontario, returned to his home to die after practicing his profession in Hoboken, N.Y., for many years.

⁂

Officers of the Moncton Dental Society: President, Dr. A. J. Cormier; vice-president, Dr. G. T. Leighton; secretary-treasurer, Dr. W. L. Gillespie.

⁂

The Quebec Dental Association elected the following officers: President, M. Fortier, Quebec; vice-president, J. Dohan; secretary, Albert Delome, Montreal; registrar, D. E. Aucocq.

⁂

It has been observed that decayed teeth extracted from young patients have their apical ends closed much earlier than the time indicated in the text books. If this be true, it should materially help in saving decayed first molars. Exodontists could easily make observations to determine the accuracy of the observation.

⁂

The many friends of Robert Andrew Jones, of Grovesend, will learn with regret of his death, after a short illness, at the home of his daughter, Mrs. Delbert Baughman, in his 72nd year. Deceased was born near Hamilton and came to Malahide when a boy, where he has resided ever since. He leaves one daughter, Mrs. Delbert Baughman.

Those in attendance at the November meeting of the Victoria Dental Society were Doctors Burgess, McKean, Russell, Moody, Garesche, Griffiths, Hall, Harding, Hetherington, Humber, Nash, Proctor, Thompson, Verrinder, Fraser, Westwood, Walker, Henderson, Poyntz and Mr. John W. Henderson, of Vancouver.

❦

That old yarn about the Chinese pulling pegs from boards in order to practice up for pulling teeth, continues to be published from month to month. At the present time the student must be able to pull three to four hundred pounds with his thumb and finger. If the story doesn't soon stop, he will have to pull one thousand pounds before admission to practice.

❦

Major N. R. Green, formerly of the Canadian Army Dental Corps, was recently appointed director of dental service for the Department of Public Health at a salary of $2,000 a year. Major Green is filling the place left vacant by Dr. W. E. Willmott, who has resigned to give his entire time to the College of Dental Surgeons. Major Green's name was mentioned by Field Marshal Sir Douglas Haig in despatches for valuable services.

VANCOUVER AND BRITISH COLUMBIA NEWS ITEMS

Dr. R. A. McAlister has opened offices in the Burns Block, 18 Hastings Street West, Vancouver.

❦

Bert McAlister, of Sixth Avenue, New Westminster, has gone to Portland, Ore., to resume his dental studies.

❦

The British Columbia Dental Board held its periodical examinations in the O'Brien Hall, Homer Street, Vancouver. Free dental service was offered, so that sufficient patients might be forward for the demonstrating work of the candidates seeking examinations. Patients were invited to come in for gold fillings, gold inlays, and silver fillings—all without money and without price.

Arrangements have been made by Dr. Pallen, head of the Vancouver schools dental clinic, to open another clinic soon in the Grandview residential district of Vancouver. Since the School Board started collecting a small fee for dental attention to the children, there has been an enormous rush of pupils to have work of this nature performed. The fee charged covers operating expenses only, with a slight surplus so that the equipment may be improved. The salaries of the dentists employed in the clinics are met by the School Board.

⁂

There is a shooting story going the rounds about a well known Vancouver dentist who had hard luck with the ducks. He decided to get far away from the crowd, where he hoped the ducks would come to his gun undisturbed. First he went to Nicomen Island; it was said that he fired only three shots all day, without any result. He spent Sunday trying to induce the ducks on Sumas Lake to come close enough for a shot. Finally, in disgust, he started home. As they reached Cloverdale at dusk, the hunters shot for about fifteen minutes and brought down five.

November 8th, 1920.

Dear Doctor Webster:

Allow me to congratulate you, personally, on your article, "Diseases of the Teeth are Preventable," in October Dominion Dental Journal. As the darkie would express himself: "You sure done yourself proud in writing such a fine paper." I want to say Amen! to the whole paper.

I believe diet of the mother during pregnancy has a great deal to do with tooth formation and also in the child, during tooth development. I believe diet has a great deal to do with periclasia, the elimination of salts from the saliva and the blood. Then we must know what hyperacidity means of the saliva, stomach contents, urine and body fluids. It is true the physiologists and pathologists must be awake to your viewpoint before the profession will stir out of present methods.

It is true that restorations are occupying such a large trend of thought of the profession that systemic treatment and systemic end-results of dental disease are not given the paramount place in the minds of the profession generally. And that reminds me of a man whom I met during the last year, who was the president of his society in that particular city, who told me on one occasion of a case presenting itself to him for treatment with a rarefied area on a central, and also a good root canal filling in the central, but its removal would, in a way, so alter the mechanical restoration, in his opinion, to such a difficult problem, that he decided no one could influence him to remove that abscessed central and mutilate the appearance of his patient.

Thus, you see, a leader among dentists giving about ninety per cent. of his thoughts in the practice of dentistry to mechanical restoration, not thinking of end-results of an abscessed central, and never dreaming a "diet" as a part of his concern in the slightest. Now, who is to blame? Are the curriculums of the dental colleges to blame? If so, I trust you will have your wish and change them about a bit.

Again, I want to say that the article is sensible, scientific, and well reasoned, and I hope you will follow it up with others.

Sincerely yours,

E. Roy Bier.

YALE-CARIBOO DENTAL SOCIETY

On April 29, 1920, the dentists of the Yale-Cariboo electoral district of B.C. convened at Vernon and organized the Yale-Cariboo Dental Society.

The object of the society is two-fold:

(1) To aid the members in keeping pace with dental progress by means of lectures and clinics.

(2) To promote a more intimate acquaintance among the members scattered over so large an area.

The officers elected were: President, Dr. R. Matheson, Kilowna; vice-president, Dr. C. Corrigan, Vernon; secretary-treasurer, Dr. R. Davison, Penticton.

The first meeting since the inaugural was held in Kelowna, October 23, 1920, when the Temple-Pattison Co., represented by Messrs. J. Henderson and F. Parry, was host to the society. Mr. Henderson addressed the meeting on "The Business Side of Dentistry," illustrating his lecture by lantern slides. A banquet at the Lakeview Hotel terminated a pleasant and profitable meeting.

FOR SALE—Four chair dental office and practice in Canadian city of thirty thousand population. Must be sold to settle estate. Communicate by wire to Bence, Stevenson & McLorg, Barristers, etc., Saskatoon, Sask., Canada.

This book must be returned to
the Dental Library by the last
date stamped below. It may
be renewed if there is no
reservation for it.

270-7-60

Author H.R. Abbott
Mem. Lib.

Title Dominion Dental Journal, 1920. V.32 Cop.B

DATE.	NAME OF BORROWER.
Nov 8/44	Dr [illegible]

Harry R. Abbott
Memorial Library

V.32 (1920)

Cop. B.

FACULTY OF DENTISTRY

TORONTO